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**INSIDE DOPE**

by GEORGE F. TAUBENECK

**Stories of the Week**

Pip Is Pa Pitt  
Good Crystal Ball  
Conversation In the Night  
Don't Worry Too Much About  
The 'Eager Beavers'  
Today's Thought

**Stories of the Week**

Week before last we were in a certain New England city which is noted for its taciturn but droll citizens. We shared a cab from the railroad station with another fellow who, when he was deposited at his hotel, paid what the meter read (60 cents) but added no tip.

The cabbie stared dolefully at the tendered half dollar and dime.

"Isn't that correct?" asked our fellow passenger.

"Yep, it's correct," returned the driver, "but it ain't right."

Another sample of New England wit was related to us at luncheon that day. It seems that an air conditioning contractor located in this Massachusetts city sent a junior partner to New York to bid on a big job.

When this junior partner arrived in Manhattan, he discovered that he had left his brief case at home.

"Urgently request you wire name of man I must contact," he telegraphed back to the home office.

The reply:

"Prospect's name is Fairfax LeFevre. Yours is Henry Cabot."

**Pip Is Pa Pitt**

Riding into Pittsburgh the other morning with Bob Greene of Parker Rustproof, we both observed that the great but grimy steel city could stand a spring cleaning.

Not three hours later we learned that leading Pittsburgh citizens feel the same way, and that they are doing something about it.

What's more, they have chosen one of the top figures in the refrigeration industry, the popular I. W. ("Pip") Danforth, longtime Westinghouse distributor, as their leader in a city-wide clean-up drive.

"Pip" is general chairman of "Pa Pitt's Partners," an organization which will direct a house-to-house and block-by-block renovation campaign. Here is his praiseworthy program:

"Take care of your own house and grounds."

"If you don't have them, get separate containers for burnable refuse and non-burnable refuse."

"When you clean your cellar, attic or garage, pile refuse neatly and securely at the regular pickup spot. If it will fit containers, put it in."

"Contact neighbors and organize local clean-up parties with everybody pitching in on the work and contributing for special truck hire. Headquarters will have a list of more than 200 private haulers available."

"Help the city by not mixing ashes and other rubbish. Tree prunings should not be strewn in the streets. Bind them in manageable piles."

"Interest every member of your community, clubs, churches and your neighbors in clean-up organizations and do your best to bring action. Clean-up, paint-up, plant and repair. 'Make cleanliness a Pittsburgh habit.'

**Good Crystal Ball**

Charles B. Ray, Sears, Roebuck's Top Economist, predicts that the United States will enjoy a \$180 billion national income this year, if Congress doesn't reduce the 90% (Concluded on Page 9, Column 1)

**AIR CONDITIONING AND REFRIGERATION News**Issued Every Monday at  
450 W. Fort St., Detroit 26, Mich.**June 30,  
1947**Vol. 51, No. 9, Serial No. 954  
Established 1926.**Bill Ending Reg. W Wins Approval of House Committee**

WASHINGTON, D. C.—First definite step by Congress toward ending of government credit controls through Regulation W came last week when the House Banking Committee approved legislation terminating these powers of the Federal Reserve Board.

The bill approved the committee would end the controls immediately after being passed by the House and Senate, providing, however, for reinstatement of the controls in time of war or during a national emergency.

President Truman has recommended that the consumer credit controls be maintained during peace-time as a check against inflation, but he told Congress that unless he received specific authorization, he would drop the present restrictions.

Marriner S. Eccles, chairman of the Federal Reserve Board, testified in support of continued credit regulation when he appeared before the Senate Banking Committee last week.

He contends that credit controls are necessary while goods are in short supply, and he also asserted that dropping controls over installation purchases now will prevent price reductions downward.

**Higher interest charges on loans for purchases of home appliances may be imposed soon by finance companies, who say their costs are rising rapidly. Their present rate of 6% may be hiked to 7%, they indicate.**

**Big Stores Target Of Hotpoint Drive**

CHICAGO—Backed by \$25,000,000 worth of new production facilities, Hotpoint Inc., is setting out to become a \$100,000,000-a-year business taking a new position "as a dominating factor in the nation's large stores."

How the appliance manufacturer proposes to do this was described at a recent regional sales conference here.

L. C. Truesdell, vice president of marketing, said the company will sponsor a store program to support department stores in competitive advertising locally. Mr. Truesdell headed 50 sales officials who presented Hotpoint's expansion story in terms of sales.

In addition to furniture and department stores, Hotpoint will look also to large specialty shops, electric utility companies, retail stores, and chain outlets as a continually-increasing market for its greatly-expanded flow of products, he said.

Through its broadened market research program, the company will conduct a continuing survey of "efficiency of distributors" and "dealers," its channels of distribution, strength (Concluded on Page 4, Column 5)

**Daily Takes over Lewyt Vacuum Cleaner Division**

BROOKLYN, N. Y.—Walter J. Daily, former director of advertising and sales promotion for Bendix Home Appliances, Inc., has been appointed manager of Lewyt Corp.'s newly-formed vacuum cleaner division, it is announced by Alex M. Lewyt, president of the corporation.

Mr. Daily will be in charge of the sales, merchandising, and advertising of what is described as a new and improved "pot" type vacuum cleaner. The cleaner, it is reported, will be merchandised through about 65 appliance distributors with approximately (Concluded on Page 4, Column 4)

**Excise Dropped From Some Air Conditioners****Units Requiring Ductwork or Special Connections Exempt**

WASHINGTON, D. C.—Excise taxes have been dropped on those store and office air conditioners which require ductwork, water connections, or special electrical connections.

Data presented to the Commissioner of Internal Revenue by manufacturers of this equipment resulted in changing the ruling, the NEWS was informed by D. S. Bliss, deputy commissioner.

Up to now, a 10% excise tax has been placed on manufacturers' sales of air conditioners under Section 3405(c) of the Internal Revenue Code, as revised in 1941. Section 3405 covers refrigerators, beverage coolers, and the like, refrigerating apparatus, air conditioners, and refrigeration components, while paragraph (c) simply lists "self-contained air-conditioning units."

The new ruling drops this 10% tax on air conditioners which are not self-contained in the strictest sense of the word.

Those units, however, which plug into standard electrical outlets, and require no ductwork and water connections are still subject to the tax on manufacturers' sales, it is inferred from Mr. Bliss' latest ruling.

Virtually all the so-called store coolers now being manufactured have water-cooled condensing units and therefore required special water connections. They are thus exempted from the tax. Some of them likewise require ductwork for installation, and are powered by 220 volt, three-phase motors, which often necessitate special wiring.

The complete statement of Deputy Commissioner Bliss regarding the new ruling follows:

"This office has had occasion in the past to issue rulings as to the taxability of certain air-conditioning units which apparently are known in the trade as store or office coolers. In certain cases, on the basis of the information previously furnished, rulings were issued that such store coolers were subject to tax under [section 3405(c)] of the code.

(Concluded on Page 32, Column 3)

**NARC To Sponsor Equipment Tests**

LOS ANGELES—Warren W. Farr, president of the National Association of Refrigeration Contractors, disclosed during a recent talk here that NARC is seriously considering establishing a testing procedure for refrigeration apparatus and parts.

Addressing a meeting sponsored jointly by the Refrigeration Contractors Association of Los Angeles and the Commercial Refrigeration Association of San Diego, both NARC affiliates, Mr. Farr said the actual testing would be done by qualified laboratories in universities or similar institutions.

Such testing will not result in specific recommendations of one make or type of equipment over another, NARC officials indicated. Rather, two or more tests will probably be run for each piece of equipment or material being tested, with reports of the tests being made available as NARC deems advisable.

A pilot run of one type of material has already been made, he revealed. The results, he declared, indicate clearly the need for such an unbiased service. He said this need has been demonstrated many times previously. (Concluded on Page 29, Column 1)

**Philco Boosts Price On 6 Refrigerators From \$10 to \$24.50**

ATLANTIC CITY, N. J.—Price increases of from \$10 to \$24.50 on Philco's higher priced refrigerator models was announced here recently at a national convention of Philco Corp. distributors.

Larry E. Gubb, chairman of the board, made the announcement and pointed out that through this latest increase, refrigerator prices were "attaining a level more in keeping with other products."

Six models were affected by the change. Comparison of the old and new prices effective in the Detroit area follows:

Model No.	Old Price	New Price
750	\$276.50	\$286.50
751	\$296.50	\$316.50
752	\$316.50	\$336.50
931	\$274.50	\$294.50
950	\$322.00	\$346.50
951	\$356.50	\$376.50

These prices, it was said, include installation, warranty, and excise taxes.

Prices in other parts of the country will vary slightly from those listed above. In New York City, for instance, they are generally \$3 higher.

Mr. Gubb pointed out that since 1941, the general cost of living has increased 55% whereas Philco's refrigerator prices had increased only 40%.

"Only if we were to return to 1941 material and wage conditions could we duplicate 1941 prices," he stated.

W. Paul Jones, vice president in charge of the refrigerator division, revealed that Philco has started production on a 4 cu. ft. unit, known as Model 411, designed for mass merchandising to apartments and large housing units.

Price of this model in the Detroit area will be \$176.75.

Mr. Jones also announced that Philco will introduce a new larger model refrigerator later.

Mr. Gubb, in discussing the company's sales picture, declared that Philco sales for the first six months of the year will exceed \$100,000,000, or more than double the sales made in all of 1940.

This is also one-third more than the sales total for 1941, he added.

John Ballantyne, Philco president, told the distributors that Philco had invested \$11,000,000 in new plant facilities and equipment since V-J Day.

**Frigidaire Announces Prices On Washer, Dryer, Ironer**

DAYTON—Frigidaire's new automatic washer will retail for \$299.75.

Retail price of the Frigidaire automatic clothes dryer is \$229.75, and the ironer will sell for \$189.75.

**Roberts Heads Bendix Advertising, Promotion**

SOUTH BEND, Ind.—Appointment of Stewart Roberts as director of advertising and sales promotion for Bendix Home Appliances, Inc., is announced by Judson S. Sayre, president.

Roberts joins Bendix after three years with United Wallpaper Co. as vice president in charge of the Trimz division.

After graduating from Northwestern University in 1925, Roberts began his business career in the merchandising department of the Chicago Herald & Examiner. He did promotional and dealer contact work on various kinds of products, principally appliances.

He left the newspaper to become assistant to Hays MacFarland of the Hays MacFarland advertising agency. Five years later he joined the selling staff of American Magazine.

**Big Supply of 'Freon' Offered In Washington**

Source Is 'Mystery'  
To Kinetic; 'Broker's'  
Price Is Very High

WASHINGTON, D. C.—"Freon-12" may be so scarce that in some sections of the country refrigeration industry groups are calling upon their state governors to take action, but there's a firm here in the nation's capital that will sell you all you want of it—maybe up to three-quarters of a million pounds—if you will pay the price.

The firm offering the "Freon" is Stone & Sagon, Inc., 2100 Connecticut Ave., N.W. They are offering the refrigerant only in ICC-4B-400 cylinders containing 330 pounds per cylinder, and the prices range from \$2.25 per pound for one cylinder (330 pounds) to \$2.05 per pound for five

**Here's the Ad!****FREON**

AVAILABLE FOR  
LARGE QUANTITY USERS  
AND EXPORTERS  
Y7257 Times

Through this advertisement which appeared in a recent Sunday edition of the New York Times, scarce "Freon-12" refrigerant to the tune of 750,000 lbs. is being offered to the industry. Nobody seems to know its source.

cylinders (1,650 pounds). Special prices are offered on larger amounts. All prices are f.o.b. South Charleston, W. Va.

Current price at which the trade buys "Freon-12" in 145 lb. drums is 44 cents a pound.

Where did this Washington firm get all this scarce "Freon"? At present, that seems to be something of a mystery. When Philip H. Sagon of the firm was questioned, he made a rather vague reference to its being "surplus" but would not elaborate further.

"Why we even got the Kinetic Chemicals people guessing as to where we got it," he chuckled. He said that his company was not in the refrigeration or chemical field, and that this was merely a "one time proposition" for them.

The proposition came to light (Concluded on Page 32, Column 1)

**Prices of Several York Products Increase 5-10%**

YORK, Pa.—Price increases of from 5 to 10% on a number of refrigeration and air conditioning products were made effective June 16 by York Corp.

No increases were made on any packaged air conditioner models, however.

**Department Store Sales Up 6% For Week over Last Year**

WASHINGTON, D. C.—A 6% increase in national department store sales for the week ending June 14 as compared with the same week last year has been reported by the Federal Reserve Board.

The board noted that the week ending June 7 showed a 7% increase, the week ending May 31 showed 12%, and the week of May 24 showed 13%.

Sales were up 9% over last year for the four-week period ending June 14, the board said.

Now ready for IMMEDIATE DELIVERY!

## New 1947 deluxe Penguin refrigerated Bar

for Home, Office and Showroom



SERVING + ELECTRIC BAR REFRIGERATOR + LIQUOR CABINET

ALL BLENDED IN A SUPERBLY ENGINEERED UNIT

ATTRACTIVELY PRICED FOR FULL RETAIL MARKUP  
WITH FULL YEAR PARTS GUARANTEE

Quality features you can promote profitably now!

- 63 ice cubes in one freezing
- Over 3 cubic feet of refrigerated storage
- Liquor compartment with lock
- Hermetically sealed condensing unit
- Mirrored back and base in serving section
- Stainless steel serving tray
- Fibre glass insulation
- Walnut, mahogany or oak plywood cabinet

**MANN**  
REFRIGERATION SUPPLY CO.  
15 Astor Place, New York 3, N.Y.  
GRamercy 3-8000

WRITE OR WIRE NOW  
FOR COMPLETE DETAILS

## Food & Drug Officials Ask Right To Seize 'Deteriorated' Goods

WASHINGTON, D. C.—Expansion of its authority to seize "filthy, debased, or deteriorated" products has been asked of Congress by the Food and Drug Administration.

Now limited by the courts to seizure of goods only when actually in movement in interstate commerce, the agency seeks approval to make these seizures after the products have completed movement, the House Commerce Committee was advised by Charles W. Crawford, associate commissioner of the agency.

## G-E Installs Refrigerator In DC4 'Flying Home'

LONDON, England—A lightweight refrigerator with a capacity of 3.23 cu. ft. and a total loading of 300 watts at 24 volts makes up part of an installation of General Electric equipment in a Douglas DC4 which was recently converted into a flying home and office for a Dutch business man.

Other units include a grill boiler, hot cupboards, and water heaters. All operate at 24 volts and are of special design for aircraft use.

Galley capacity is said to permit ready preparation of a four-course hot meal for 16 persons.

The installation is similar to that in Winston Churchill's famous wartime "Skymaster."

## Arizona Processing Plant Plans To Freeze, Pack, and Ship to Any U.S. Locker Plant

### Firm Handles Livestock In 'Assembly-Line' Fashion

PHOENIX, Ariz.—"Our new \$50,000 plant gives us facilities for the first complete cycle of operations in the state of Arizona. Our cooler has space for 50 head of beef, and the plant is arranged for assembly line operation throughout.

"In handling beef we go get it, kill it, age it, cut it, bone it and roll it, freeze it and deliver it according to the customer's specifications.

"Pork we handle by all modes of processing from farm to finished products, including ham, bacon, and all marketable items.

"Poultry—we gather, dress and draw turkeys, chickens, geese, ducks, squabs, freeze and store for local and shipping distribution.

"Our program enables us to do business with receivers on the Pacific Coast, New Mexico, Colorado, and Utah. However, we are confident that when we get fully under way, our plant will be able to freeze, pack, and ship to a locker plant anywhere in the United States."

Thus LeRoy Stevens outlines the present and future functioning of the new H. & S. Food Processing Corp. plant, planned and built by Earl Harris and LeRoy Stevens, at 4000 Christy Road, Phoenix.

Earl Harris is the pioneer operator who opened the first frozen food locker plant in Arizona, in 1939, the Arizona Frozen Food Lockers at Six Points, in Phoenix, and sold his interests to go in the army.

The new H. & S. Food Processing Corp. plant represents the advanced ideas he visualized as his ambition for postwar operation, and is his first substantial business venture since coming out of the army. The plant is so located and arranged as to provide for expansion, with new equipment additions, as growth of business requires.

LeRoy Stevens has had extensive experience in business requiring handling of foods, and is well known in Phoenix as proprietor of Tex's Cafe, 1911 Grand Ave., opposite the Arizona State Fair Grounds, who puts out a humorous self-knocking calendar declaring that Tex's is the place where "the steaks are tough," that makes his establishment a lot of good trade with folks who enjoy a laugh along with a mighty good meal.

Leslie Evans Refrigeration Co. of Phoenix, handled the equipment installation. Mr. Evans has been engaged in refrigeration and air conditioning installation and maintenance with headquarters at Phoenix for about 14 years.

The building for the new plant is initially 40 x 60 ft. Equipment includes specific items from Curtis, Brunner, C. V. Hill, Wilson Cabinet Co., and other well known manufacturers.

An equipment sales division will feature the new Maytag home freezer, and the Wilson line, including the Wilson milk cooler.

## Brown Instrument Will Continue Firm Price Policy

PHILADELPHIA—Brown Instrument Co. will continue to operate on a firm price basis in the sale of all its products, it has been announced by L. M. Morley, vice president and general sales manager of the company.

"Through intensified cost reduction and installation of automatic machinery we found a few months ago we could quote on a firm price basis," said Morley. "We eliminated the escalator clause on our equipment at a time when the industrial picture was particularly unstable."

## Jacksonville Dealer Opens Display Rooms

JACKSONVILLE, Fla.—New display rooms and warehouse have been opened at 1636 Hendricks Ave., this city, by Harold Ashley Co., Inc., a household appliance firm which had been located for the last two years at 802 Hogan St.

In its new quarters the firm has more than 2,500 sq. ft. of floor space for merchandising the complete line handled. The building is constructed of concrete block and masonry. The warehouse covers an area of approximately 1,500 sq. ft.

Products sold by the Ashley firm include a complete line of appliances. The company also is the agent for the complete installation service of Carrier room and office air conditioning.

## Firm Plans \$125,000 Project

RUSSELLVILLE, Ark.—According to Cleo Lingle, general manager of the Lingle Refrigerator Co. here, the firm plans improvements and additions to its factory which will cost approximately \$125,000.

## Str-r-rike!

There's an easy out to all of your supply problems in Kelvinator's network of 50 parts depots. Conveniently located throughout the country, they carry a *complete* line of refrigeration parts and supplies.

There's one near you for convenient over-the-counter service, or, if you prefer, mail or phone your order. Either way, it means quick service to you on the part you need—when you need it—and it's *competitively* priced.

DIVISION OF NASH-KELVINATOR CORP., DETROIT

**Kelvinator**

CONDENSING UNITS  
REFRIGERATION PARTS AND  
SUPPLIES



BUY KELVINATOR FOR ALL YOUR REFRIGERATION REQUIREMENTS

**Wall WIRE PRODUCTS COMPANY**



PLYMOUTH • MICHIGAN

Makers of

REFRIGERATOR SHELVES • STAMPINGS  
FORMED AND WELDED PRODUCTS

When tin proved unobtainable for a protection for refrigerator shelves, we pioneered the Pro-Seal finish.

Our Pro-Seal finish has become the standard of the industry.



## September NFFLA Convention Will Show Methods of Improving Locker Business

DES MOINES, Iowa—A skeleton outline of the program being prepared for the national convention of the National Frozen Food Locker Association has been released here by Albert Guggedahl, executive secretary of the association.

The convention is scheduled to be held Sept. 22 to 25 in the municipal auditorium at Kansas City, Mo. Its program is being aimed at showing members "better methods to improve the locker business" through clinics, speaking sessions, and exhibits by manufacturers, suppliers, contractors, and dealers, according to Mr. Guggedahl.

### 50,000 SQ. FT. OF SPACE

The exhibits, to cover more than 50,000 sq. ft. of space, are being sponsored by the Frozen Food Locker Institute as the Eighth Annual Frozen Food Locker Exposition.

They will form an integral part of the convention and are said by Ray Farquhar, executive director of the Institute, to be the first showing exclusively for the locker industry in three years.

As of June 11, Mr. Guggedahl said, 49 exhibitors had signed up for 76 booths out of the 153 available in the arena of the auditorium. He pointed out that the exhibitors will be so situated that no long, roundabout tours will be necessary to get to them from the clinic rooms or from the music hall, where the general sessions will be held.

The six to eight clinics planned will be directed and supervised by a rotating group so that delegates may take in one or two the first day and shift to others the second and third days, he explained.

Subjects to be discussed include meat processing, slaughtering, poultry processing, bookkeeping and records, curing and smoking, packaging and materials, construction and design of plants, and merchandising of frozen foods.

Three general sessions have been scheduled, Mr. Guggedahl said. They will be limited to only two speakers per session.

Though no speakers have yet been announced, he declared that the association is making every effort to obtain high class talent.

### OUTLINE OF CONVENTION

Skeleton outline of the convention program looks something like this:

Monday, Sept. 22.—Registration throughout the day. Exhibits to open at noon with a general session scheduled for the evening.

Tuesday, Sept. 23.—A general session in the morning and clinic session in the afternoon. National officers and directors will meet with state presidents and secretaries in the evening.

Wednesday, Sept. 24.—A business meeting and election of officers in the morning. Clinic sessions in the afternoon. "Exhibitors Night" during the evening.

Thursday, Sept. 25.—General session in the morning. Clinics in the afternoon. Closing session and entertainment in the evening.

### LIST OF EXHIBITORS

A list of exhibitors, as of June 11, follows:

Food Locker Equipment Co., Pasteuray Corp., Midwest Metal Stamping Co., Enrichment Products Co., McQuay, Inc., Pacific Lumber Co., Morton Salt Co., A. E. Staley Mfg. Co.

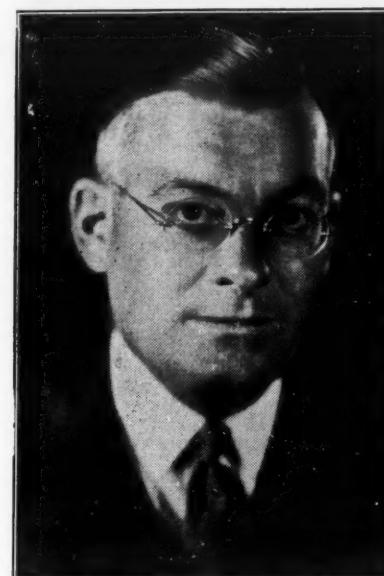
Frigidaire, division, General Motors Corp., All-American Meat & Bone Cutter Co., Quick Frozen Foods, United Cork Cos., Iceberg Refrigerated Locker Systems, Inc., Arcticaire Refrigeration Co., Lily-Tulip Cup Corp., D. R. Card Co., Safe-Way Food Locker Co., The Kleen-Kut Mfg. Co., McGrew Machine Co.

Cleveland Refrigerator Co., All-Steel Equipment, Inc., Lindley Box & Paper Co., Jamison Cold Storage Door Co., Acme Visible Records, Inc., Kalamazoo Vegetable Parchment Co., Economy Power Engineering Co., Bankers Rubber Stamp, Inc.

Phil Hantover, Inc., York Corp., Chase Industrial Refrigeration Equipment & Engineering Co., Arketex Ceramic Corp., General Electric Co., Biro Manufacturing Co., C. F. Mohr Associates, The Pickwick Co., U. S. Slicing Machine Co., Earle E. Brown Organization, The Griffith Laboratories.

Master Mfg. Corp., Container Corp. of America, Marathon Corp., Airtex Corp., Dole Refrigerating Co., Meat Merchandising, Inc., Butcher Boy Cold Storage Door Co., Amana Society, Salem Engineering Co., Koch Butchers' Supply Co.

## Changes Jobs



WALTER J. DAILY

## Daily Joins Lewyt--

(Concluded from Page 1, Column 2)  
6,500 dealers, public utilities, and department and furniture stores.

Current headquarters of the division is at the Lewyt factory in Brooklyn. It will be transferred to New York City at a later date.

Prior to joining Bendix three and one-half years ago, Mr. Daily was an account executive with the Roy S. Durstine advertising agency in New York City. For more than eight years, he was advertising and sales promotion manager of General Electric Co.'s refrigerator department.

## Hotpoint Drive--

(Concluded from Page 1, Column 2)  
of competitive distributing organizations, strength of competitive products, and appraisal of consumer's attitude towards new products and unsatisfied needs," Mr. Truesdell pointed out.

He said personal calls, combined with dealer and consumer panels, mail questionnaires, and analyses of sales records will help provide this key information as a basis for the merchandising program.

Hotpoint's present output of every product, he told the sales staff, is greater than ever before, with twice as many electric ranges coming off the line. The 1948 production will more than triple present rates.

Turning to the appliance outlook, which he described as generally "healthy despite rumors of early saturation in some products," Mr. Truesdell analyzed the demand for particular products as follows:

Electric ranges: "Electric ranges have not been backing up, although two or three reports from our dealers state they have exhausted their waiting lists for our highest priced model. However, in no case have we received a report indicating the lapse of a waiting list for our second and third price models."

Refrigerators: "Demands for refrigerators are still way out of proportion to supply. The situation is different in this instance because facilities for producing large numbers exist and the plants cannot get materials necessary to increase production immediately."

"Hotpoint's production will go up sharply, however, in the third quarters of this year and remain high until the end of 1947, making the year's total output considerably higher than 1946."

Automatic washers: Reports of slowdowns were attributed largely to volume production and possibly to a postponement in buying by those who are waiting for the units promised by several large manufacturers, including Hotpoint.

"The high price of washers and the fact that they are still moving reflects the soundness of the basic market," Mr. Truesdell said.

Electric water heaters: "The most surprising appliance . . . with no apparent saturation point seen in any part of the country."

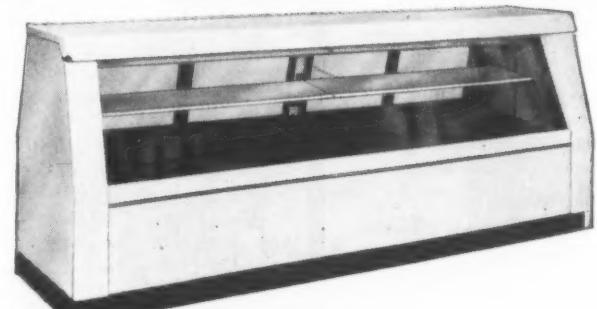
Mr. Truesdell announced that the company's heater production will be expanded considerably and that Frank Sacha is being transferred from Washington to Chicago to head a new water heater sales division.

As for prices, the Hotpoint official predicted there would be no change this year.

"Wage increases and firm materials costs caused our prices to rise several weeks ago, and now others are bringing their prices up," he said.

## CLIP THIS TIP

### for profit-planned refrigeration



• Will commercial refrigeration volume mean profits to you? Insure your future by teaming up with this quality line of refrigerators that's profit-planned for intelligent initial costs, top efficiency and minimum maintenance expense.

Production facilities naturally do not permit unlimited jobber-distributor openings now, but your name on our preferred listings guarantees sincere consideration as present material scarcities ease.

## GOLDSMAN

Manufacturers of Commercial Refrigerators  
1325 N. LAWRENCE STREET • PHILADELPHIA 22, PA.



**"Capacity  
is a serious subject"**  
*says The Lehigh Team*

BTU RATINGS are the 'facts of life' that have to be faced eventually. That is why Lehigh continues to dwell on the subject. Lehigh hopes to save you from learning these facts the costly way.

Refrigeration engineers will tell you that there are many "trick" ways to obtain "capacity" ratings. You can, for instance, put a cake of ice on the cylinder head, direct a diffuser at the unit, put a heat exchanger on it, or pack it in dry ice. But who's fooling who? Just pity the poor devil who tries to duplicate the "rating" on a job!

There is only one right way to make a test according to the ASRE Code. Honest BTU Ratings for commercial application can be obtained only by test conditions of precision controlled room temperature of 90° with suction gas entering the compressor at 80° through the full range of evaporating temperatures from minus 25° to plus 45°.

That is the way Lehigh BLU-COLD BTU Ratings are established—and that is why BLU-COLD Ratings can be duplicated in the field.

### Lehigh BLU-COLD HEAVY-DUTY CONDENSING UNITS

1/3 to 2 H.P. \* Complete Line To Include Up to 5 H.P.

Lehigh Mfg. Co.,

PLANT:  
LANCASTER, PA.



## What the Chicago Tribune's first century of service means to advertisers

*The Chicago Tribune in 1946 had the largest circulation in its history—an annual average of more than 1,068,000 on week-days and in excess of 1,538,000 on Sundays—more than that of any other standard-size newspaper in America. In the same year, the Tribune printed the largest volume of advertising in its history, leading all other newspapers in America.*

The above record was established by the Chicago Tribune on the eve of its hundredth anniversary. In a century marked by spectacular change, this record grew out of one thing that did not change—a newspaper's steadfast devotion to its basic principles.

One hundred years ago on June 10, 1847, the Chicago Tribune made its first bid for attention in a bustling pioneer community of 16,000. Since that time, it has had to face the challenge of reporting the news of events, issues and crises growing out of America's involvement in five wars, eight major depressions and 25 Presidential elections.

### First of all a newspaper

The record of its performance over a full century of time is adequate to appraise an institution's character, motives and its concept of responsibility to those it serves.

During these 100 years, 52 other Chicago newspapers have come and gone. The Tribune lives thru the generations because it never has surrendered the principles which brought it national prominence within a few years of its founding.

First of all a newspaper, the Chicago Tribune, in fulfilling its obligations to its readers, has spared no expense or effort to gather the news of every significant daily development at home and abroad. It has let nothing interfere with its deter-

mination to print the facts, completely and without compromise.

### Steadfast in the public interest

In striving to make each day's issue better than the one of the day before, the Tribune continuously has pioneered in new fields of interest to readers. It has adopted each new mechanical improvement as fast as science and its own staff could devise them.

As a result of its stanch independence in sharing with readers the right of a free press and its fighting stand in the public interest, the Tribune early won notice as "the much abused and widely read Chicago Tribune."

During the decades since the Tribune placed the name of Lincoln before the people for nomination, it has been unflagging in its intense Americanism and in its efforts to advance political, social and moral progress.

### Only character can retain success

Brilliance can achieve success. Only character can retain it. Owned and published today by the third generation of the founder of its greatness, the Tribune reaffirms its steadfast devotion to the principles basic to its growth to leadership as Chicago's most widely read newspaper.

As the record makes plain, the editorial qualities which build deepest interest and attachment among readers produce the best results for advertisers.



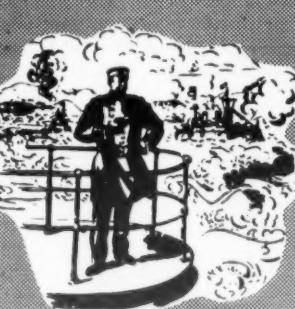
1855—JOSEPH MEDILL  
JOINED THE TRIBUNE.



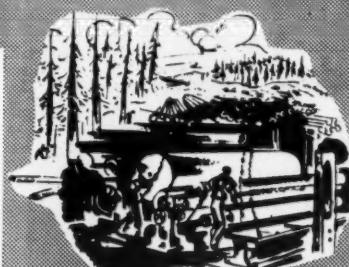
1860—TRIBUNE CALLED  
FOR THE NOMINATION  
OF LINCOLN.



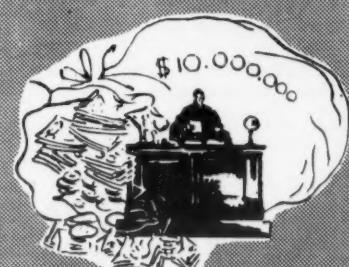
1871—JOSEPH MEDILL  
ELECTED MAYOR OF  
CHICAGO.



1898—WORLD SCOOP OF  
NEWS OF MANILA BAY  
VICTORY.



1912—FIRST PAPER MILL  
ACQUIRED IN 1912; FIRST  
TIMBERLANDS IN 1915.



1923—COURT FOUND  
FOR THE TRIBUNE IN THE  
THOMPSON MACHINE  
\$10,000,000.00 SUIT.



1930—FIRST CHICAGO-  
LAND MUSIC FESTIVAL  
PRESENTED.



# Chicago Tribune

THE WORLD'S GREATEST NEWSPAPER

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**Appliance Survey****'Shoppers' Tell How They Were Treated**

(Concluded from preceding page)  
not invite me back and did not offer his card or name."

Another question was worded this way: "Do the atmosphere, displays, and layout make it easy to shop here?"

Three replies to this follow:

"No. As I looked at the merchandise on display, I was aware that there were several items with which I was not acquainted. As there was no advertising of same, my knowledge must remain incomplete. I felt there was little emphasis placed on effective advertising or display."

"No. I found the crowded appearance of the interior made for a stuffy atmosphere and inconvenient displays. The iron display was bad because it was almost hidden and no markers or advertisements were used to draw attention to it."

"Yes. I found the displays convenient, in good light, and the layout roomy enough to allow adequate inspection of the refrigerators."

Six shopping reports disclosed these answers to the query:

"If you were shopping for yourself, would you want to return to this salesclerk?"

"No. He handled me as if he didn't care whether I bought or whether I didn't . . ."

"Yes. The salesclerk was courteous and attentive. He seemed to want to please me. His sure manner gave me confidence in his knowledge of the merchandise."

"No. She did not know the merchandise. Her manner was faltering and unconvincing and made me feel that I could not possibly trust the girl to know whether she was selling me a sound piece of merchandise."

"No. He wanted to persuade me to spend beyond what I had set as a price limit and was persistent about it. His attitude on choice was, 'You have to take what you can get or wait and wait.'"

"Yes. The salesclerk was friendly and courteous, interested in my problem and gave me an informative description of the refrigerators he had to sell."

"No. He was discourteous and uninterested. He answered the telephone three times during the short while I was there, without as much as asking my pardon. I left the store during the third call which was long and was still going on as I boarded the elevator."

"Did the salesclerk know the merchandise he was selling?" the survey report asked.

"Yes," said one investigator. "The salesclerk seemed perfectly familiar with all the electrical equipment. He expressed himself well. He convinced me of his knowledge of the washing machines."

"No," reported another. "The salesclerk made no attempt to demonstrate or explain any mechanical features. I asked her why the plastic agitator on the washer hung quite loosely on the center post. She said she did not know but they all came that way from the factory. She made no effort to get the information."

A third shopper also replied in the negative, describing the salesman as "inexperienced and awkward."

"He had to refer to the tags to give me even the size of the boxes and their price," he said.

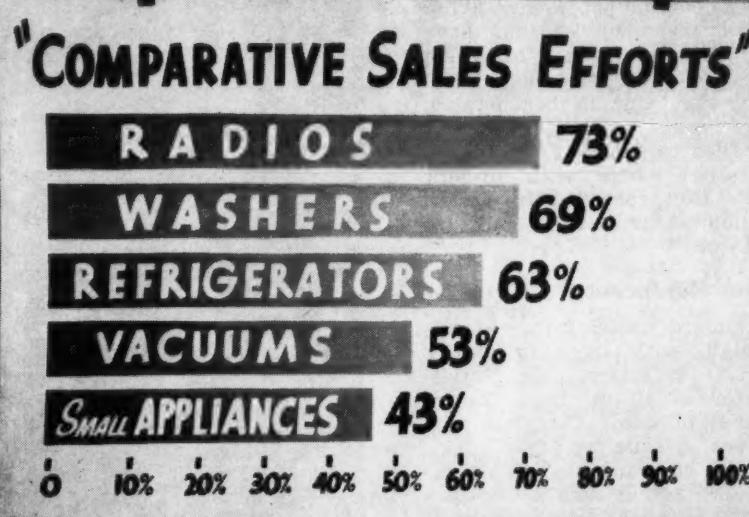
"No," a fourth analyst answered. "The salesclerk showed such little interest in radios that I doubt if he would have been able to tell me the brand name of the models in the window without looking first."

Again, Public Analysis wanted to know if the salesclerk offset objections to some feature of the merchandise.

"No," was one reply. "I objected to glass shelves in the refrigerator. He said that they wouldn't break—later said in an irritated manner they would break 'if you step on them.'"

Answering in the negative, a second shopper explained that the attention of the salesperson could not be obtained long enough to get a chance to object.

"Yes," a third stated. "When I objected to the apparently flimsy construction of the hinge system of the door to the freezing compartment, the salesperson demonstrated

**...Failing To Exploit Products Fully?**

Customer-analysts shopped Boston stores for 30 refrigerators, 30 washers, 12 radios, 10 vacuum cleaners, 5 flatirons, 5 home freezers, 4 broilers, and 4 toasters. Comparative sales efforts are depicted above. The survey was sponsored by the Electric Institute of Boston and conducted by Public Analysis, Inc., of Boston

how strong the door was by forcing it backward and up and down."

Another investigator answered "No" because "When I pointed out that the walls of the tub on the washer (enameled inside and out and possibly apt to crack) were thin, in

my opinion, the salesclerk said with sarcasm, 'Just your imagination.'"

The question, "If the product was not available for immediate delivery, did the salesperson remain patient and interested in you?" brought these three replies:

"Yes. The salesclerk pointed out the various features of the ..... by comparison. Only the highest grade material was used in their manufacture and they would give many years of satisfaction. Each machine was the best in its class and my choice depended on how close to fully automatic performance I wanted."

"No. When the customer asked about a ..... refrigerator which he saw displayed on the floor, the salesperson merely said, 'Not for sale!'

"Yes. The salesperson said they carried the best known makes of refrigerators. He said he would notify me if any 8-cu. ft. refrigerator came in or if he received word that they could anticipate any earlier delivery than one month. He took my name and address for the mailing list."

**Pressed Steel Car Defers Refrigerators to '48**

CHICAGO—Pressed Steel Car Co., Inc., will not go into production on electric refrigerators until next year.

A. Raysson, general sales manager of Pressed Steel's domestic appliance division, said shortages of sheet steel and delayed delivery of machinery, caused the postponement.

An announcement will be made shortly regarding new products added to the Presteline line.

**Retailers Organize In 3 Wisconsin Cities**

WASHINGTON, D. C.—Three chapters of the National Electrical Retailers Association were organized recently in Wisconsin, according to an announcement by C. C. Simpson, managing director.

Located in Racine, Kenosha, and Milwaukee, the chapters were formed under the direction of NERA state chairman Julius Kovach, Paramount Good Housekeeping Shop, Racine; division chairman Wendal Lewis, Klode Furniture Co., Milwaukee, and Norman Brahmstedt, NERA field director for the state.

Officers of the Milwaukee chapter are Howard Droeckamp, Droeckamp Appliance & Furniture Co., chairman; Clarence Ewart, Fleisner Bros., Inc., vice chairman; and Maurice Pikas, Time Radio & Appliance Store, secretary.

Victor Joerndt, Radio-Electric Co., is chairman of the Kenosha chapter; Jack Williams, Williams Home Appliances, vice chairman; and Joseph Hoffman, Hoffman's Good Housekeeping Shop, secretary.

The Racine chapter is headed by chairman V. C. Novak, Novak Appliance Co., vice chairman William A. Allan, Thrifty Sandy's, and secretary Bob Buffman, Buffman's, Inc.

Organizational activities are now under way in seven other states.

# ANOTHER DUAL-TEMP® EXCLUSIVE

\* Trade Mark registered

Dual-Temp is really two refrigerators housed in one beautiful cabinet . . . each completely insulated from the other . . . each with its own cooling system . . . each with its individual cold control. Temperature in either compartment can be varied independently. For example, freezing locker can be set at 15° below zero, while temperature throughout the moist cold compartment remains at an average of 38°. No other refrigerator can do that!

**1. Two Refrigerators in One**—Above, a built-in freezing locker; below, a huge purified moist-cold compartment . . . as independent in their operation as though they were two separate refrigerators.

**2. Built-In Freezing Locker**—Quick-freezes foods at temperatures as low as 15° below zero . . . the sub-zero temperature required for efficient fast freezing.

**3. No Defrosting**—Dual-Temp's huge, purified moist-cold compartment never has to be defrosted. Com-

pletely insulated from the freezing locker, temperature never goes below freezing. No freezing means nothing to defrost.

**4. No Covered Dishes**—With 85% relative humidity throughout, foods can be placed anywhere in the moist-cold compartment and kept fresh for weeks without covering.

**5. Sterilamp Protection**—acts like sunshine to retard mold growth, reduce spoilage due to bacteria, and combat offensive odors. Only Dual-Temp has this important feature.

## New Detroit Firm Finds Lush Market In Making Refrigerators for House Trailers

**DETROIT** — With house trailer production today hitting twice the figures it reached before the war, new companies are coming into refrigeration manufacturing for these travelers.

Leading the field in the Detroit area is the Travis Mfg. Co., with headquarters on US-24, Telegraph Road, the main north and south artery 10 miles west of the city.

Roy Travis started the company a year ago, in June, 1946. He had spent the last 11 years with the only firm in this territory then making electric refrigerators for house trailers. When the company moved to another city, he decided to stay put and set up a small factory of his own.

He had several reasons for taking the step. He'd lived here long enough to make a lot of friends. As chief engineer for the company which was leaving, he had learned considerable about refrigeration installation and

maintenance problems in the trailer business.

And he figured that business prospects were good enough for launching one of his own; for by 1946 trailer production again was on the upgrade. His guess turned out to be a good one. Here are some of the figures for the end of that year released by trailer Coach Mfrs. Association:

1946's production was reported by the Department of Commerce at 46,910, the highest in history. The total number of trailer coaches (the official name for trailers built to be lived in) in use at the end of 1946 had passed 220,000.

The great majority of these weren't used just for business or pleasure travel; the figures showed 89% of all of them were registered as legal residences. In other words, 195,000 house trailers needing refrigerators—and very few of them with electric refrigeration!

Finally, these high figures cannot be classed as temporary, as part of a brief picture that will pass with the passing of the housing shortage. No sir! Of the 300,000 people now living in trailers, three out of four have indicated their preference for them over a house or an apartment.

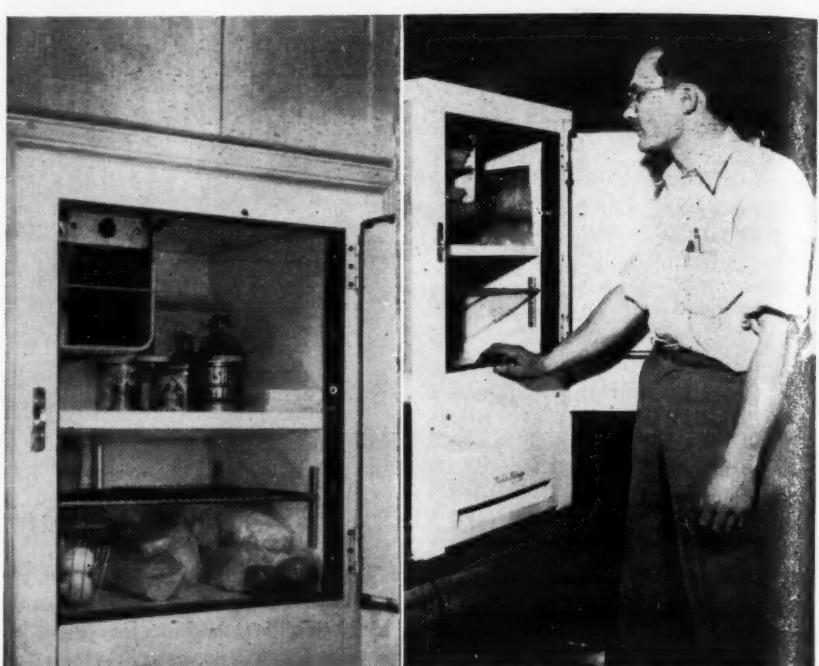
The important item in these figures, from Mr. Travis' point of view, was the fact that commercially produced house trailers come with in-built iceboxes! He proceeded to design his mechanical unit specifically to replace these.

### Designed Replacement Unit

The standard trailer icebox stands 32 in. high, with an 8 in. utility drawer over or under. Mr. Travis' refrigerator is 40 in. high, 23 in. wide, and 18 in. deep. Complete with cabinetwork, it sells for \$155.

When the company started operations a year ago it was a one-man proposition turning out eight complete refrigerators a week. Today it's a five-man setup averaging 18 units a week. The difference in the production rate is that three of the five men make up a full-time installation crew, and that materials aren't

### Lots of Room, Yet Compactly Installed



(At left) One of the 3.8-cu. ft. Travis refrigerators installed in a house trailer flush with other cabinets and accessories. (At right) Mr. Travis inspects a newly-completed model prior to delivery.

coming in fast enough to allow the full-speed production schedule that the orders are asking for, Mr. Travis admits.

Distribution so far has been limited for the most part to the territory including southern Michigan, Ohio, and Indiana, but there is one dealer representing the company in Tennessee, one in Georgia, and one in Florida.

Ninety per cent of the company's business is wholesale, through established trailer-coach dealer outlets. The other 10% is retail, in the numerous trailer camps on this western outskirts of the city, or drawn in from the highway by the company's conspicuous location and local reputation.

The company's activity is such, however, that 50% of its business is within reach of headquarters. Most of Mr. Travis' dealers handle their own installing and servicing, but the company's trouble crew is able to pinch hit for those within this area who can't. The special trailer equipped for this work averages 150 miles a day, Mr. Travis estimates.

### Slides Out for Servicing

Actual servicing of the units is simplified by the design of their assembly. If you unscrew the left side breaker strip and front vent and remove the two center bolts that hold the evaporator in place, the whole unit comes out intact, sliding out along a supporting ledge in the upper left hand corner of the cabinet.

With this open setup, repairs take less time, and when necessary the entire assembly can be replaced, anywhere in the country, within a week. It carries a one-year guarantee.

The idea of having the complete assembly mounted rigid within the trailer, rather than on separate springs or rubber bushings, has proved highly effective, he states. The trailer springs themselves absorb

the road shocks that otherwise can cause serious tubing breakages and other damage.

One of the firm's customers has driven to California and back with his trailer six times since the unit's installation, Mr. Travis reports, with entirely satisfactory performance.

### 15 Minutes Off, 3 On

The system's design has made possible an operating cycle of 15 minutes off to every three minutes on under normal conditions, according to Mr. Travis.

Construction throughout is aluminum and rustproof. The inside chamber is finished with a Pittsburgh seam, in which the metal is folded with a double overlap, guaranteed to be waterproof.

Every working part that goes into the unit also is tested, including a leak test on the evaporator and a final vibration test on the complete unit after installation. With most open type units, Mr. Travis explains, you can't read a newspaper in the trailer when the refrigerator is running.

The refrigerator is powered by a 1/4-hp. Universal Cooler unit, actuating a Bohn evaporator. Insulation is 2 1/2 in. of spun Fiberglas. Installation includes putting in a ventilator, important because temperatures in a closed trailer sometimes hit 120° F.

Capacity of the refrigerator is 3.8 cu. ft. The box also has an ice compartment, holding 25 lbs., for use when traveling.

Mr. Travis predicts that even more economical trailer refrigerators are practical, if mass production methods were employed in their construction.

But he's not speaking for himself, he says. His present shop at 6333 Telegraph, measuring a well-filled 2,000 sq. ft., is too small now to take care of the materials and activity his sales are calling for as is, much less any row of heavy presses.

### Universal's Sales Sensation...The FREEZMASTER

\$595 WITHOUT SUPERSTRUCTURE  
\$695 AS SHOWN



Operating Costs 25% Below Average For Similar Units

Length 88"  
Width 30"  
Height 38"  
Superstructure 26" high  
Capacity approx. 17 cu. ft.  
Temperature range  
0° to 30° below 0°

Here's super-salesmanship in a shining white case with stainless steel top. All-steel electric welded construction. Gold Bond Zerocell insulation. Tank of convenient depth. 100% rust-proof cold plates, vapor sealed. Double pane ball-bearing doors gilded with stainless steel. Built for long service. Model C-200-S.

Dealer inquiries invited. Above prices list—uncrated F.O.B. Los Angeles.

Call or Write for Information

**UNIVERSAL REFRIGERATION CO., INC.**

Phone: ORegon 82154

5601 W. Century Blvd., Los Angeles 54, Calif.

# Command Performance

## by the Post-War

### INLAND HANDI-CUBE TRAY

The Handi-Cube Tray model illustrated combines striking beauty with sensational performance. Pan lifter is optional.

You command ice cube performance unrivaled when you give a hand to the new Inland Handi-Cube Tray—with aluminum grids.

This mechanism is rugged and robust for permanent ice releasing service.

From the first glance to final performance, this striking and graceful Inland Handi-Cube Tray compels the kind of attention that makes sales flow your way...faster.

For complete details and prices write to—  
INLAND MANUFACTURING DIVISION, General Motors Corporation, Dayton, Ohio

FAST FREEZING  
QUICK RELEASING

ICE TRAYS BY INLAND

INLAND

## INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)  
parity floor under farm prices.

For years, Mr. Ray's national income projections have been amazingly accurate. He bases them primarily on the condition of agriculture—an industry with 10 times the invested capital of the steel and auto industries combined.

Representing a corporation that will get close to 1% of the national income, Mr. Ray's forecasts have to be good.

### Conversation In the Night

"I don't really want to be a Big Shot," a self-identified Average Man confessed to us one evening while he relaxed in his easy chair—with his feet comfortably ensconced on a cushioned ottoman.

"It requires too darned much hard work, and too many worries, to be one of those corporate executives who earn a five-figure salary—the way I look at it."

"But look, chum," interposed his ever-loving but highly intelligent wife, "did you ever stop to consider that you might owe a debt to the Opportunity System which has made America pre-eminent? Too many other members of your generation have adopted and embraced the same defeatist attitude recently, it would appear."

"The way things have worked out—what with taxes and all—darned few men of your age are willing to suffer the pangs of ambition. They figure that working hard won't pay, so they give up and decide to take it easy."

"Doesn't that open a door to YOU? Could be that your comfortable decision to work no more than you need to will return to plague your conscience in the 1950's—when the opportunities for men who are willing to work far into the night probably will be immense."

"Some day I'd like to own a mink coat, a full chest of sterling silverware, etc. If you're the man I think you are, it shouldn't be too difficult for you to earn the luxuries I've

always dreamed about."

Possibly the smart, ambitious wife has a point there. Sometimes big stakes are won by default. Occasionally the potential winner of a race doesn't show up, so an also-ran gets the prize. On the other hand, it's true that many ambitious-to-get-ahead men are discouraged and thwarted by everything they see, hear, and bounce against nowadays.

To be a "success" today, an eager fellow must do more than toil tirelessly while his competitors sleep or play—although that extra-effort helps! More important, in the long run, is his *stamina*, and the indomitableness of his willingness-to-achieve no matter what the cost or the reward.

He must have a tough hide (to ward off insults) and he must want to win for winning's sake, if he expects to become a top-notch man in his profession.

And he must forget that the farther he goes, the less he will earn proportionately (because currently unfair tax deprivations will rob him of most of his deserved extra earnings). He must have that Divine Urge to *excel*. (The pay-off will come in personal satisfaction, at least!)

"There's always room at the top"—especially today. When the ambitious man stops to consider that competition (that ugly bogey which frightens so many men into an "I-don't-care, to-heck-with-it" sort of lethargy) isn't what it used to be because government taxation and labor union work-standards have vitiated and taken the heart out of any reason for individual effort—he should be encouraged to go out and try-like-a-fool to attain Fame and Fortune.

If he will just keep on trying and working and endeavoring to perfect his art and his technique and his know-how—even though he realizes he may never be paid adequately for this conscientious effort, he may become a "Big Shot" before he realizes it. Why? Because practically nobody else is putting out extra-effort today.

So many "solid" men have given up trying to do more than they are asked to do during recent years (and, consequently, have dropped out of the picture) that only a few odd "irregulars" are still in the competitive picture currently.

These crazy, unorthodox gents, who possibly don't know what's good for them, capitalize upon their to-hell-with-the-consequences willingness to stick their necks out, and their eagerness to express the creative urge which wells up within them and will not be denied. Unfathomable and "screwy" as they may be, you'll find that many of these "crazy guys" are not receiving comparatively large emoluments.

Does that worry you? Do you resent the big money paid to overtime workers and Imagineers? Well, if you do, you're another Lost Soul. These die-for-dear-old-Rutgers lads are all that's left of the American Strain nowadays to vie with the plodding, entrenched, protected job-holder who stands pat on outmoded ways of doing things in the hope of being retired on half-pay when he reaches the age of 60.

The "screwy" guys—the pioneers who pour themselves into their work—represent Progress, while the nine-to-five job-holders personify Stagnation and Retrogression.

Unless the to-hell-with-the-time-clock Imagineer is encouraged, and unless the ambitious and overtime-working individual is rewarded properly, our grand American System will slow down, drop behind, and fall apart.

Eager young men, inventive middle-aged men, and progressive old men are what America needs today. But such off-the-beaten-track individuals are rare.

If you doubt this, look around. Just try to find a young man who is feverishly driving himself toward a still-unseen goal. Most of the promising youngsters you meet betimes are more interested in Security than they are in Opportunity; and

they are engrossed more in the outcome of contests which involve their sports and hobbies than they are in the eventual progress of their own careers, and with the future of the concerns for which they work.

Most men who possess the native ability and the talent to succeed handsomely (no matter how old or young they are) presently are engaged in useless, time-killing recreational pursuits in their off-hours—because they can't figure out how any extra-effort will benefit them nowadays.

"What's the use?" they cry, "the tax collector will get you even if your jealous associates don't."

And so Progress is stymied.

Nevertheless, despite the obvious reasons for these gripes, there still exists today a measly, small coterie of undaunted tryers who want to "make something of themselves," no matter what the odds against their success may be.

They don't give a damn whether they are paid time-and-a-half for night work, or not. They have dreamed a Dream, and they're hell-bent to make this wonderful conception come true.

### Don't Worry Too Much About the 'Eager Beavers'

To compete with their eagerness and with their willingness to knock themselves out on a job just for the fun of accomplishing something, the conscientious old-timer who is anxious to maintain his "place" need only half-try to "strut his stuff," however.

That's how low "competition" as an entity, has sunk in our scheme-of-

things. Imagineers go places—that's for sure. But because these unorthodox "originals" comprise a disappearing breed, it's seldom that an old-timer who has plenty of "know-how" finds himself pushed aside.

The sincerely ambitious man—when confronted by the obstacles which current political and social inhibitions have placed in his path—may decide that all he can do to win Fame and Fortune for himself is to put Astounding Ideas against the machinations of an unfriendly world.

That's where he goes wrong. Actually, all he has to do is compete against a mere handful of tired old men who got where they are before the "less work for more pay" era arrived. Most of these oldsters would gladly retire if they could find successors to whom the job meant more than anything else in the world.

A helluva lot of honest hard work, expended over a reasonable length of time, will qualify almost any good *youthful* competitor for a "pole" position in the biggest race of all—the race for High Stakes in Business.

Expend more effort than your employer expects you to, promote a New Idea now and then, and—who knows?—you may hit the jackpot—be cheered, revered, and respected for the rest of your life—and become a "Big Shot" yourself!

### Today's Thought

Perhaps one reason the dollar will not do as much for you as it used to, is the fact that you do not want to do as much for the dollar as you used to.

## Extra Years of Trouble-Free Air Conditioning are BUILT INTO GEMCO!

### That's Why Gemco is the Fastest Growing Organization in Air-Conditioning History!

Take a good look at these long-life, "years ahead" features, most of which you'll find only in GEMCO. They tell you why GEMCO's are selling so fast... why GEMCO is the talk of the air-conditioning industry.

**2-stage Compression**—Peak efficiency, even with restricted or abnormally warm water supply, or high load factor. Saves up to 50% and more in water consumption.

**No Vibration**—You can balance a nickel on edge on a Gemco compressor. Try it on any other air conditioner.

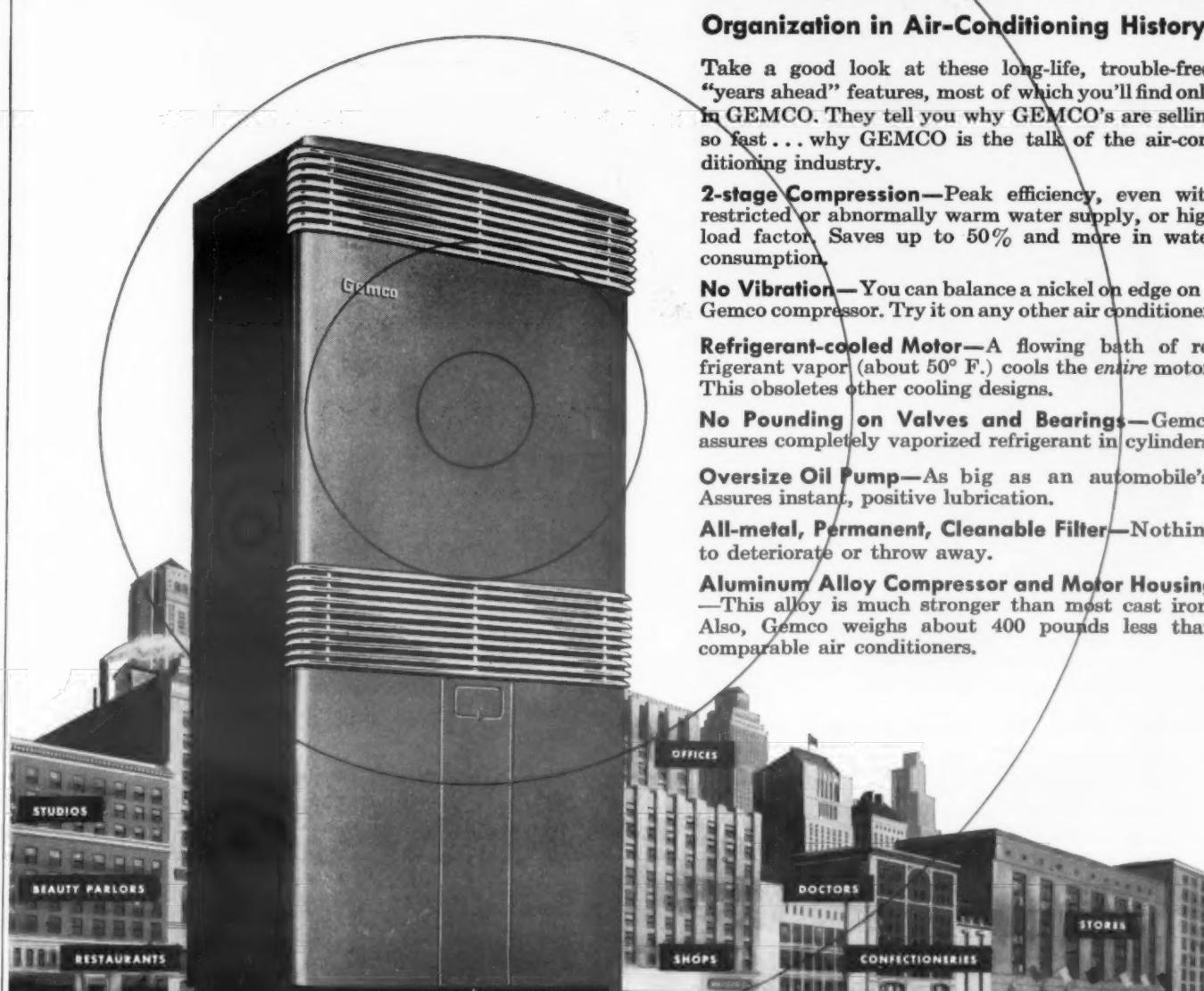
**Refrigerant-cooled Motor**—A flowing bath of refrigerant vapor (about 50° F.) cools the entire motor. This obsoletes other cooling designs.

**No Pounding on Valves and Bearings**—Gemco assures completely vaporized refrigerant in cylinders.

**Oversize Oil Pump**—As big as an automobile's. Assures instant, positive lubrication.

**All-metal, Permanent, Cleanable Filter**—Nothing to deteriorate or throw away.

**Aluminum Alloy Compressor and Motor Housing**—This alloy is much stronger than most cast iron. Also, Gemco weighs about 400 pounds less than comparable air conditioners.



Gemco Distributor franchises  
in a few territories are still  
available. Phone, wire or  
write for information.

**GEMCO**  
AIR-CONDITIONING  
General Engineering and Manufacturing Co.  
4417 OLBATHA, ST. LOUIS 16, MO.

## Wilson Freezer Adds 3 New Display Cases to Its Line

NEW YORK CITY—Expansion of the Wilson Freezers, Inc. line of commercial refrigeration equipment to include meat cases, delicatessen cases, and self-service dairy cabinets has been announced by the company.

The firm also makes ice cream and freezer cabinets.

Announcement of the expansion follows extensive tests of the equipment in the New York City area.

Sale of this equipment to the trade will be handled through factory representatives who have exclusive territories covering the country, the company said. Domestic sales are under the direction of Vic Raphals.

## Bell & Lannom Is L. A. Firm

LOS ANGELES—Bell & Lannom Refrigeration Service is the firm name under which William E. Bell and James W. Lannom have published a certificate that they are conducting business at 2203 West Santa Barbara Blvd., Los Angeles.

## Sees Half of Farms Having Frozen Storage In 10 Years

DES MOINES, Iowa—Half the farmers in the United States will have home freezers or a rented frozen storage locker, or both, within 10 years, it was predicted at the recent Iowa Refrigerated Locker Association convention by H. L. Sawvill, assistant refrigeration product specialist, International Harvester Company.

"Home freezers and freezer lockers each have their own particular function," Mr. Sawvill said. "They supplement, rather than compete with, each other."

"On the other hand, the home storage cabinet offers adequate, convenient storage for daily and weekly needs and the advantage of frequent freezing in comparatively small quantities. On the other hand, the locker plant provides the same customer with unlimited reserve storage facilities and offers many other services that will render his home freezer more valuable."

## Air Conditioning Is Called Upon To Save 'Last Supper' Painting

MILAN, Italy—Air conditioning has been called upon to aid in the fight against the rapid deterioration of Leonardo da Vinci's famous painting "Last Supper."

The action has been ordered by a committee of art experts in an effort to preserve the religious mural.

An air conditioned room will be erected around the portion of the wall of the former monastery of Santa Maria delle Grazie upon which da Vinci painted his most famous work. The wall upon which the painting is located is one of the few portions of the ancient structure which survived the bombings.

The public will view the mural through a glass panel. Past attempts to save the painting by placing quantities of lime around it have failed to halt the rapid chipping off of the pigment.

## To Speed Camera Supplies

## \$1,000,000 Addition To Eastman Kodak Refrigeration Facilities To Hold -85° F.

Another record for such a system, it is believed, is the volume of cooling liquid, or "brine," which the plant will contain. This will be approximately 100,000 gallons of methylene chloride, selected because of its very low freezing point.

The new system will bring added efficiency to process condensing operations in connection with the making of photographic materials, the company explained.

Kodak Park's Power Department designed the huge system in cooperation with a leading manufacturer of cooling machinery.

Previously, the lowest temperature in the company's refrigeration plant was -36° F.

The company's cooling plant, in its entirety, is one of the largest in existence and has a total rated capacity of about 19,000 tons of refrigeration per 24 hours.

In the new system, which will be a part of the entire refrigeration plant, two units—each with a 375-ton daily capacity—will be installed this year and other units are planned for the future, the company said.

The new units will be powered by two turbines of more than 2,300 total horsepower. Each of the units will circulate about 2,300 gallons of methylene chloride a minute. The units will operate at a vacuum of about 27 in.

Besides the new system, the plant operates others at these levels: -36° F. system circulating 14,000 gallons of calcium chloride a minute; two separate 9° F. systems, each pumping 4,000 to 5,000 gallons of calcium chloride a minute; and four 35-40° F. water systems, each running at from 200 to 7,000 gallons a minute.

## Mann Supply Is N. Y. Gloekler Distributor

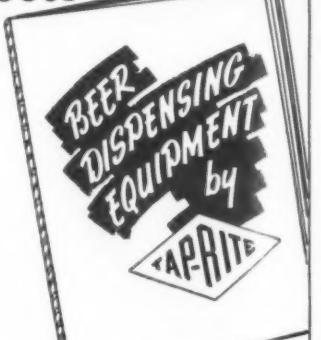
ERIE, Pa.—Appointment of Mann Refrigeration Supply Co. of New York City as a distributor for Gloekler commercial refrigeration equipment has been announced here by C. J. Elsner of the Gloekler Refrigerator Co.

## Shea Joins Staff of Connor Engineering

NEW YORK CITY—W. B. Connor Engineering Corp. here has announced that Patrick J. Shea, formerly with Carrier Corp., has joined its staff.

The Connor Corp. manufactures activated carbon air recovery equipment and Kno-Draft adjustable air diffusers. Mr. Shea was associated with Charles S. Leopold in designing the air conditioning system for the Pentagon Bldg.

## NEW 42 PAGE CATALOGUE



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FAUCETS • BLOCK TIN  
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**PRODUCTS CORP.**

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HACKENSACK, NEW JERSEY

**Servel SUPERMETIC**

This month we started shipping limited quantities of 1 HP and 1½ HP Servel Supermetics condensing units.

Servel's newest sealed-type units will include 20 different models in sizes from 1 HP through 3 HP for both air- and water-cooled applications, in low and medium temperature designs. The 2 HP and 3 HP sizes will be coming off the line in July.

**COMPACT**—These larger Servel Supermetics offer you every advantage of the smaller fractional horsepower models. Yet space requirements have been held to a minimum. For example, the husky 4-cylinder 1½ HP

unit pictured above is only 29" long, 16¾" wide and 22¼" high.

**COTPLETLY WIRED**—There's no additional wiring necessary with Servel Supermetics. You simply connect the electrical circuit, tubing lines, and with water-cooled units, the water supply and drain. This means you make a real saving in installation costs, collect more profit on every job.

**NEW LITERATURE**—These "ready-to-use" Servel Supermetics are fully described in our new illustrated folder. Write for your free copy today. Address Servel, Inc., Division RN, Evansville 20, Indiana.

Servel's new "Supermetic" condensing units serve dealers and fixture manufacturers in every vital field...

1. STORE FIXTURES
2. MILK COOLERS
3. HOME LOCKERS
4. BEVERAGE COOLERS
5. VENDING MACHINES
6. ROOM COOLERS
7. FARM FREEZERS
8. WATER COOLERS
9. INDUSTRIAL COOLING
10. VEHICLE REFRIGERATION



## New Refrigerated Equipment, Including Freezer Shelves, Licks Baker's Problem

### 'Separated Refrigeration' System Solves Tough Matter of Maintaining Supply of Danish Pastry

ST. LOUIS—The problem of how to maintain excellent stocks of fine Danish pastries, when the demand for them fluctuates sharply, has been simply solved at the Lake Forest Pastry Shop at 7737 Clayton Rd., here, by means of a low temperature walk-in refrigerator.

Lake Forest bakery, one of St. Louis' finest pastry shops, has been experimenting with sharp freezing of unbaked doughs and other pastry ingredients for the past eight years. Located on Clayton, Rd., leading into the wealthier suburbs of St. Louis, the bakery specializes in delicate, fine pastries in the better-price brackets.

Until the installation of the walk-in refrigerator, however, there were many instances when insufficient quantities of Danish pastries had been baked, or an over-supply was on hand which could not be kept in salable condition for more than a day or so.

The solution developed by Karl Bollenmueller, owner of the bakery, and St. Louis Butcher Supply Co., is a 14 x 8 x 8-ft. walk-in refrigerator, located in the basement, which operates as a "bank" in which large quantities of made-up Danish pastries may be maintained for quick baking when needed.

The refrigerator is a built-in, cork-insulated job, lined with sanitary tile interior, and applies refrigeration in two ways. Shelving on two sides of the box consists of Kold-Hold freezer plates, on which Danish pastry products may be frozen by direct contact. Jellies, jams, icing, and a variety of decorative edible ingredients are frozen on the plates.

Dough, on the other hand, is sharp-frozen in a series of slides on the opposite side, which will contain 30 standard 18 x 26 in. baker's trays of dough. The dough is made up approximately twice a week, during "slack hours," tested, and is placed in the slides 30 trays at a time.

There is no direct contact between the dough trays and the freezer plates, all of the refrigeration applied entirely by air circulation. This, Mr. Bollenmueller has found, has the advantage of producing a smoothly-frozen mass with certain other desirable effects.

Without any previous precedent to work with, Mr. Bollenmueller has

Danish pastry ingredients for each season of the year are made up periodically against a schedule which Mr. Bollenmueller made up from a study of sales in preceding years—and there is thus always an ample stock of Danish pastries which merely require "assembling" and baking in the Lake Forest ovens in order to meet a heavy market demand.

In addition to the huge walk-in refrigerator, the Lake Forest Bakery also has two refrigerated dough retarders, one of which is a combination sharp-freezer and dough retarder. The sharp freezer section of the retarder is used for keeping an ample stock of frozen fresh eggs and other top-quality bakery ingredients. A third refrigerated retarder of the same type will soon be installed in the bakery.

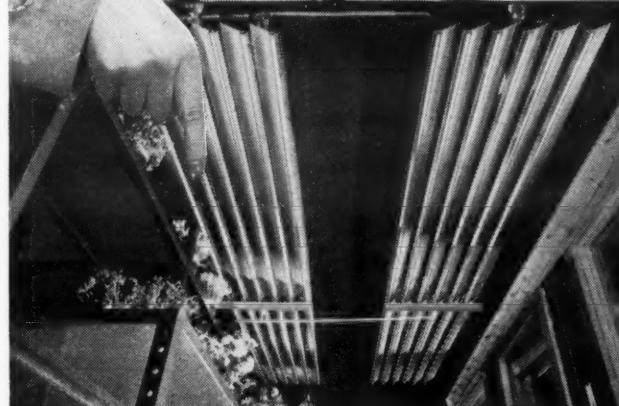
Designed to conserve valuable super-market space is this "three level" self-serve refrigerated display case in Moll's supermarket, St. Louis. Top level is used for butter and lard, and perishable specials; center section is used for eggs, and the bottom is used for milk, cheese, and other dairy products. The case is 6 feet high. Refrigeration is furnished by a 1½-hp. condensing unit.

### A 'Three Level' Self-Serve Display Case



experimented with various methods of freezing Danish pastry, and has found that this "separated refrigeration" gives excellent results.

Refrigeration for the walk-in box is furnished by an air-cooled, 3-hp. Carrier condensing unit, which operates the Kold-Hold plates at a -10° suction temperature; producing 0° air temperature inside the refrigerator, and -10° at the plate contact.



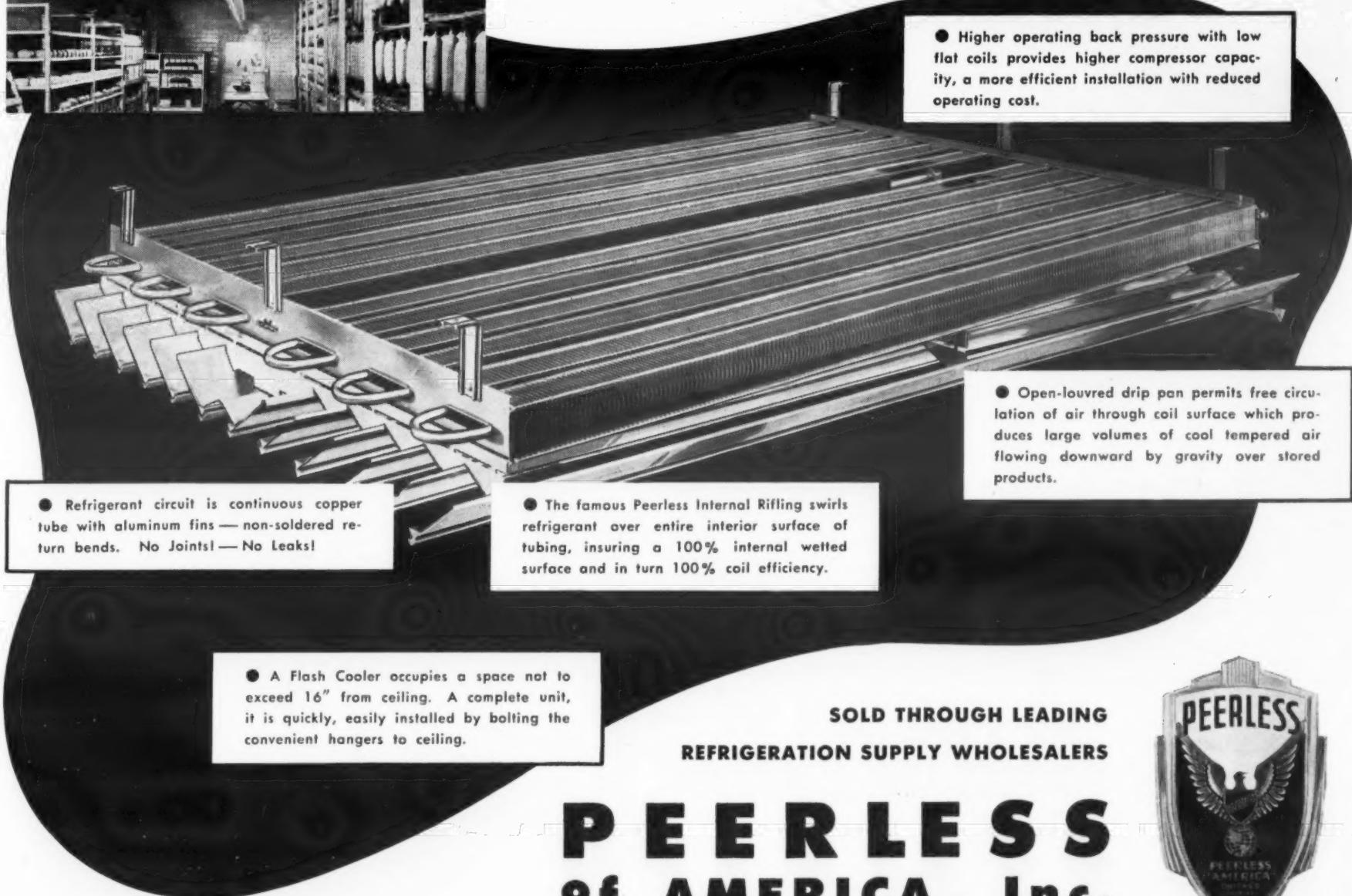
## For Positive Maintenance of HIGH HUMIDITY...

# PEERLESS FLASH COOLERS!

Where coolness without dehydration is essential, PEERLESS Flash Coolers give the desired performance. These are the original Flash Coolers, introduced 15 years ago by PEERLESS, and improved to their present high-efficiency in the refrigerating of cut meats, flowers, and all products where high humidity must be maintained. Wide, shallow coils spread under ceilings enable these units to deliver large volumes of cooled air with high relative humidity. Install them in cold storage boxes, walk-in and reach-in refrigerators, for retailers, wholesale houses, packing houses. Better preservation of products by PEERLESS Flash Coolers brings customer satisfaction.

For superior performance specify all these PEERLESS products: Flash Plates, Flash Coolers, Unit Coolers, Ice Cube Makers, Fin Coils, Off Center Coils, Expansion Valves and Capacity Boosters. Write for Details.

Higher operating back pressure with low flat coils provides higher compressor capacity, a more efficient installation with reduced operating cost.



SOLD THROUGH LEADING  
REFRIGERATION SUPPLY WHOLESALERS

**PEERLESS**  
of AMERICA, Inc.

General Sales Offices 2901 Lawrence Ave., Chicago 25, Illinois, U.S.A.





**FIELD REPORT****After-Hours Lighting****Lures Appliance Customers**

(Concluded from preceding page) capitalize on the heavy stream of traffic past the store.

Although Kacey's Home Supplies runs weekly newspaper copy, the policy has been to advertise nothing which cannot be immediately delivered, according to Mr. Trudeau.

"We feel that we will make more friends this way," he pointed out. Likewise, the company is not accepting down-payments or priority registrations on appliances—preferring to operate on a first-come, first-served basis.

"There is hardly any aspect of home life which our salesmen cannot hit," he pointed out. "We will get most of our prospects from advertising, from sidewalk traffic and from previously-sold customers. We intend to service most of our own merchandise, with the exception of refrigerators, which will be handled by supplying distributors."

An automatic light switch, set to turn off the lights at ten o'clock each night, keeps Kacey's a blaze of glory on Broadway.

**Price Resistance Noted In Refrigerators, Ranges**

COLORADO SPRINGS, Colo.—"The supply situation is rapidly correcting itself, except on refrigerators and electric ranges, and washers will probably be caught up within two or three months," believes H. D. Henderson, who manages the Maytag Appliance Co. here, dealer for Maytag, Admiral, Zenith, and several lines of small appliances.

Although the demand for refrigerators and ranges is holding up well, Mr. Henderson notes that price resistance is beginning to develop.

"We have to do more selling now," he comments.

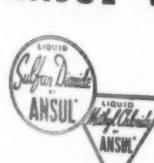
"There seems to be considerable interest in Admiral's two-temperature refrigerator, and we have quite a few orders for this model, but no deliveries have been made yet. There hasn't been as much demand for the two-temperature box as for the standard refrigerator, however," he adds.

While Mr. Henderson reports that home freezers are in some demand, he doubts that they'll be as popular as two-temperature refrigerators.

"Lots of people here use lockers which cost them about \$15 a year in rentals. They tell me that they can't see paying a lot of money for a home freezer under these circumstances," comments Mr. Henderson.

**for  
SULFUR DIOXIDE  
and  
METHYL CHLORIDE**

**See Your  
ANSUL WHOLESALER**



These Ansul Refrigerants have a long record for DRYNESS, PURITY and DEDPENDABILITY. You will like Ansul's friendly service.

\*REG. U.S. PAT. OFF.

**ANSUL CHEMICAL COMPANY**  
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MARINETTE, WISCONSIN  
Distribution for Kinetic's "Freon-11," "Freon-12,"  
"Freon-21," "Freon-22" and "Freon-113"

COMPRESSOR VALVES, ANGLE VALVES,  
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**RV**  
PRODUCTS

REFRIGERATION VALVE & MFG. CO.  
PORT HURON, MICHIGAN

**Dealer Urges Every One of His Home Freezer Prospects To Read 'Zero Storage In Your Home'**

COLORADO SPRINGS, Colo.—A veteran serviceman, Walter Ament operates an appliance and service firm here under his own name and strives to give the customer good service during and after the sale of any item.

"I am primarily a serviceman, and I went into the sales end because I felt that customers deserved excellent service after the sale," he says. "Service, to me, is all that a customer is buying, and so about a month after any major appliance is delivered, we follow it up to see that everything is satisfactory."

This service angle is being applied to Mr. Ament to the problem of pro-

moting home freezer sales, a field which is "going to take a lot of education of the public," he believes.

To "service" his home freezer prospects, and to help educate them in the uses of freezers and frozen foods, Mr. Ament has every prospect read a copy of the book *Zero Storage in Your Home*. And he is now working up a brochure on home freezers which will go out to 12,000 prospects.

A Philco dealer, Mr. Ament also handles the lines of Deepfreeze, Refrigeration Corp. of America; Electromaster and Presteline ranges, Duo-Therm water heaters, American kitchen equipment, Easy and other

washers. In addition to appliances, a full line of radios and records is featured.

Through a separate company Mr. Ament distributes the Snow Crop brand of frozen foods in southern Colorado, and he has found that the merchants in his territory are quite interested in frozen food dispensing equipment.

And quite a number of his customers have shown interest in the combination refrigerator and freezer.

"I believe the city dweller is an excellent prospect for the combination box, but those people who have their own gardens should have a home freezer," says Mr. Ament.

Getting back to the subject of the service in the appliance field, Mr. Ament declared that "servicemen could be the finest salesmen in the business."

"Instead of sitting in the back room waiting for service calls, they ought to go out selling in their spare time, for they could make a lot more money that way."

**R. F. Metz Named Manager of Don-Roy Distributorship**

CONNERSVILLE, Ind.—Appointment of R. F. Metz, Connerville, as manager of the Don-Roy Co. home distributorship of American Kitchens has been announced by Don Gray and Roy D. Morrow, Jr.

Mr. Metz will supervise the activities of dealers in seven towns and cities including Rushville, Liberty, Cambridge City, Carthage, and Brookville, Ind.

The distributorship also sells Frigidaire appliances.

**LARKIN** ...the leading manufacturer of complete commercial and industrial refrigeration and air conditioning equipment

**L**ONG and productive experience, keeping step with advanced engineering skill and conscience, has made Larkin products recognized leaders in industrial refrigeration and air conditioning. Our manufacturing processes have explored the entire range of possibilities for improvement—and our present roster of products covers every phase of this growingly important field. Origination and patenting of the cross-fin coil is just one example of technical enterprise that has established the Larkin line. Bright and imaginative finishes on what might otherwise be drab and purely utilitarian equipment is another advance which illustrates our completeness in design and production. For variety... versatility... and performance... look to Larkin.

**LARKIN**

519 MEMORIAL DRIVE S.E.  
ATLANTA, GEORGIA

THE WATCHDOG OF THE NATION'S FOOD SUPPLY



TRUCKING heavy appliances is child's play when you use an Easload Appliance Truck. You merely slide the Easload under the refrigerator, range or what-have-you—cinch the straps and back the truck away. A touch of the foot pedal swings the big 10-inch rubber tired wheels backward to balance and carry the entire load.

When you go up or down steps, the wheels go into their forward position

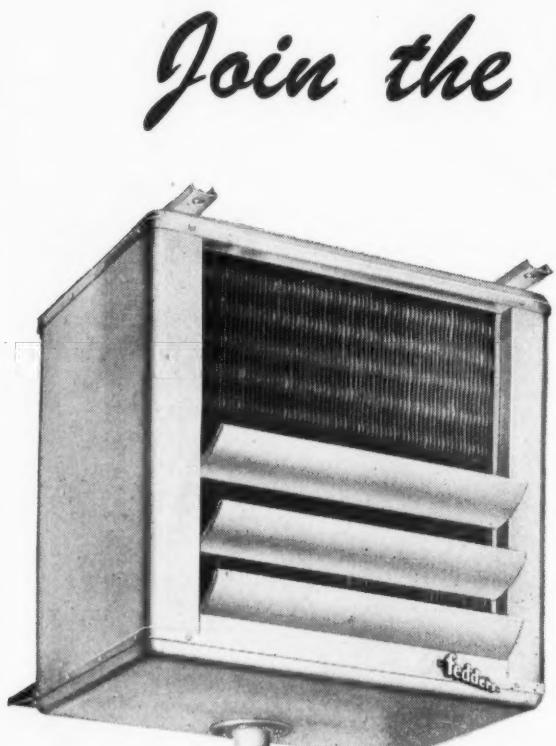
and lock by merely kicking the foot pedal. You then slide the load on the smooth tubular truck handles. This feature makes it easier to load and unload your delivery truck also.

All told, there are 11 big, time, trouble, and torso saving features of the Easload Appliance Truck that soon pay for its cost.

**Immediate Delivery**  
\$48.50 f.o.b. Los Angeles, Cal  
Capacity 800 lbs.

**COLSON EQUIPMENT & SUPPLY CO.**

1317 WILLOW STREET LOS ANGELES 13, CALIFORNIA



## FEDDERS REFRIGERATION PRODUCTS including

### Unit Coolers

It is smart to select Unit Coolers ON FEATURES! Sturdy, rustproof full-depth cabinets . . . all-copper core . . . certified ratings . . . thorough dehydration . . . quiet fans,—those high spot a few Fedders Quality Features worth having. Horizontal and Panel Models.

### Condensers

Installation and service engineers can again safeguard performance with Fedders Patented Continuous Tube Condensers. For standard condensing units up to 2 HP. Write for specifications and new low prices.

### Clip-on Superheat Thermometer

The quick, accurate means of checking and adjusting superheat. Strong . . . serviceable . . . self-contained . . . reads from any angle . . . clips onto  $\frac{1}{2}$ ,  $\frac{3}{8}$  and  $\frac{3}{4}$  inch O. D. tubes. Write for new Bulletin 392-A.



**FEDDERS QUIGAN CORPORATION BUFFALO 7, N.Y.**

## Growers Can Meet Competition, Cut Cost By Packaging Vegetables at Point of Shipment

### With More Economical Use of Shipping Space, Proper Refrigeration, Packaging Process Pays for Itself

PHILADELPHIA — Prepackaging fresh vegetables at the growers level is a "must" if this type of produce is not to lose out to the frozen, processed, and canned varieties in the sharpening competition for the consumer's dollar.

That opinion was expressed by A. L. Martin, director of research for the Western Growers Association, at a recent conference of the American Management Association here.

"If the present wasteful, unsanitary, hard-to-buy methods of retailing fresh produce is continued; if the growers, shippers, and wholesalers of fresh produce ignore this retail bottleneck; if they continue to do little or nothing to prepare their products for self-service purchase; and if fresh produce is not kitchen-serviced for housewives so that they no longer are obliged to spend the hours in their kitchens preparing these products which they could better employ, you and I are going to eat less and less fresh vegetables as each year passes," Mr. Martin told the convention.

"We will eat more frozen, canned, processed vegetables. The distaff side of our homes will see to this, and we'll like it."

Mr. Martin declared that his studies over a period of two years,

as the research and marketing director of an association of California and Arizona vegetable and melon growers, "convinced me that consumer packaging at the point where the products originate was the principal answer to the problem.

"With the exception of fresh meat, shipping point consumer packaging of vegetables is the last great food packaging job that remains to be done. It is proving to be one of the most difficult packaging problems that has confronted the science of packaging.

**Packaged vegetables.** Packaged where they are grown and from whence they are shipped to market; packaged so that they can become self-service items in food stores everywhere; so that they reach consumers ready for the stove or table; waste-free; garden-fresh; sanitary; and, incidentally, branded with the name and trademark of the grower.

### Growers Use Research

"In short, fresh vegetables with all the advantages of processed food, plus the superior nutriment and flavor of the fresh article. That is the objective of our research."

Mr. Martin asserted that the wholesaler and retailer cannot do the job because the costs are too high to ever make it successful. It is much too wasteful, he said.

"They can package an average of only 60% of the weight of each carload of these vegetables they receive. The balance—40% of the weight received—is thrown away. Much of this waste is the jacket leaves, top, etc., which are used to preserve the edible portions of the product.

"To illustrate. Carrot tops look nice, but they serve no useful purpose. As a matter of fact, after harvesting, the carrot tops live on the nourishment they derive from the carrot itself.

"Yet they weigh 26% of the carload. Remove them and you have a better carrot and you save 26% of the freight.

"Cauliflower jackets are promptly

removed in food stores and the consumer buys only the curd. Yet cauliflower jackets weigh 63% of the carload.

"We transport these jackets thousands of miles and pay the freight only to throw them away before the consumer enters the store. Silly, isn't it?

### Would Double Cargo

"If these products were packaged in consumer units by the grower, the jackets and tops would be removed. More than twice as many pounds of jacketless cauliflower—that is, the part we eat—could be transported in the refrigerator car than at present and about one third more pounds of carrots.

"The result is a big saving in freight and packing costs—more than enough to pay the entire cost of packaging these products in a 100% transparent, protective film."

### Factors In Packaging

Mr. Martin noted that three factors enter into the consumer packaging of vegetables: refrigeration, decay control, and the correct packaging film.

"Fresh vegetables cannot be blanched," he declared. "Neither can they be frozen. They must be transported at about 38° F. and this temperature must be maintained for the entire transportation period, which from California to the Atlantic seaboard is from 12 to 15 days.

### Some Stores Need Cases

"Then the product must be kept in perfect condition in the store until it is sold—and not all stores are equipped with refrigeration cases.

"We must treat these products to prevent decay, and we can't use chemicals which are in any way toxic or which destroy flavor.

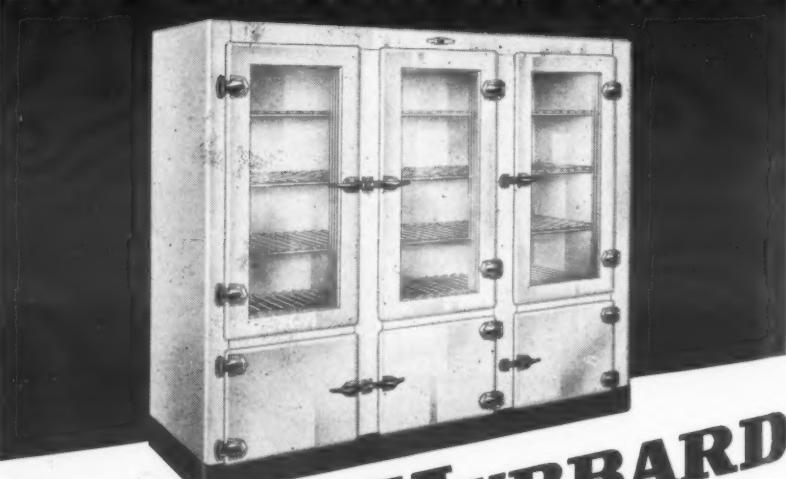
"The products must be sterilized. They must be pre-cooled and washed. They must be dried.

"After all this is done, they are then ready to be packaged. And the cost of operation, including the cost of the packaging material must not exceed two cents per pound."

(Concluded on next page)



## To Preserve it "PH"-it with a REACH-IN Cabinet



## PUFFER-HUBBARD

ANOTHER CASE OF GOOD REFRIGERATION ENGINEERING

- ✓ Electric Welded Steel Frame
- ✓ Welded Interior Porcelain Lining
- ✓ Porcelain Exterior
- ✓ Exclusive Grad-u-matic Air Conditioning feature
- The only refrigerator with this patented feature

All these plus

All these features and many other refinements are combined into every Puffer-Hubbard cabinet to make it today's best buy. Solid door or glass door models with Thermopane Triple Glass. Also available, icemaker units.

**PUFFER-HUBBARD MFG. CO.**

★ \*The Mark of a Good Case  
GRAND HAVEN, MICHIGAN, EST. 1898

## Better Packaging Machinery On the Way, A. L. Martin Tells Management Conference

(Concluded from preceding page)

Mr. Martin declared that present packaging machinery is much too slow for profitable operation by the mass shippers he represents. He said that the fastest machines he knew of could handle only 35 to 40 heads of lettuce per minute. For practical operation, the shipper must package not less than 200 heads per minute.

However, he felt confident that the association's scientists and engineers have this problem licked. He said that they have invented and built machines that can meet the requirements set for them.

### Some Vegetables Keep 45 Days

The association's research has also come up with some answers to the problem of decay control, he indicated. Means have been found, he asserted, to prolong the life span of lettuce, celery, broccoli, carrots, cauliflower, tomatoes, and brussels sprouts to not less than 45 days.

"We can clean, treat these products for decay control, package each head or stalk or bush, and hold them without loss of weight, crispness, or without any discoloration, oxidation, mold, or slime at temperatures between 33° and 40° F. for 45 days, with no deterioration in taste or loss of sugar content," he stated.

### Major Selling Items Only

"While eventually, practically all fruits and vegetables will be consumer packaged at shipping point, for several years to come, shipping point prepakaging of fresh produce will, in my opinion, be confined to major selling items.

"With few exceptions, the fruit and vegetable commodities that can best be packaged at shipping point within the very near future represent about 75 cents out of every dollar the consumer spends in retail stores for fresh fruit and vegetables.

They are:	
	% of Produce Dollar Volume
Potatoes .....	18.6
Oranges .....	18.3
Tomatoes .....	6.3
Bananas .....	5.7
Lettuce .....	4.9
Apples .....	4.5
Onions .....	4.0
Beans .....	3.6
Carrots .....	3.4
Grapefruit .....	3.4
	72.7%

"I believe that the savings will be much greater than the cost of pre-packing..."

## Business Decline, But No Depression Demand for Electrical Goods Will Help Support Economy, Says Newbury

FRENCH LICK, Ind.—Business won't be as good in the next couple of years as it is now, but there isn't going to be a depression. Prices and incomes will be brought into line with the new higher postwar levels in a gradual and orderly fashion.

Such is the outlook as seen by F. D. Newbury, a director of Westinghouse Electric Corp. Addressing a meeting of the Controllers Institute of America, he declared:

"The situation is not one that requires any drastic reduction in the average price level, and, I am tempted to add—any drastic reduction in total national income."

"I expect," he predicted, "there will

be a gradual decline in general business, so that 1948 and 1949 will not be as active business years as 1947. But this decline will not mean depression, in my opinion. It will give us the chance to narrow the wide spreads in prices and in incomes that the war and postwar inflations have produced."

"Bank credit was never so plentiful, nor has it ever had such a permanent foundation," he pointed out. "Past price inflations, and specifically those of 1920 and 1929, were induced and supported by private bank credit. They developed into crises largely because of the exhaustion of bank credit."

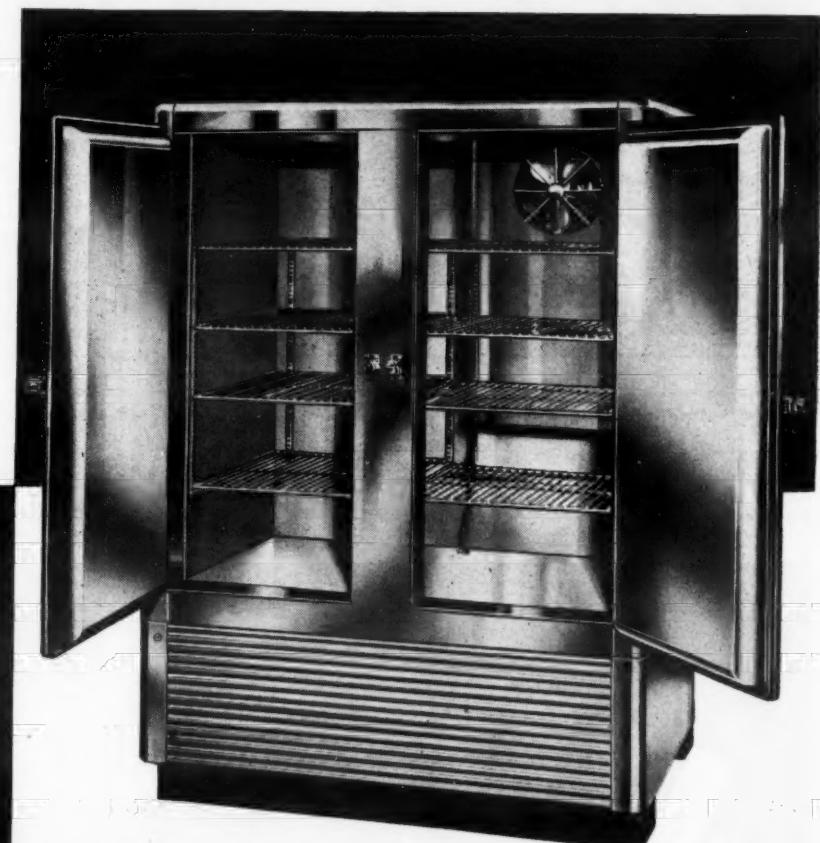
Turning to heavy industry, Mr. Newbury said experience with past business cycles "shows that we have recognizable declines in general business only when heavy manufacturing industries, such as steel, automobiles, electrical equipment and other machinery industries also decline. . . .

"We need fear a decline in general business . . . only when declines occur in these heavy industries. In the current situation, these particular industries have the surest prospects of continued demand."

As for the export situation, he claimed the largest single physical factor in the 1920-21 depression was the decline in United States exports.

## At your Service..

The finest refrigerator ever built . . . and this is it . . . occasionally requires service adjustments. And the Koch Model 4725 has been manufactured to make that service easy. For example, the properly balanced 1/4-H.P. condensing unit is set behind a panel which can be easily removed. The condensing unit is set on slides that pull out so that any adjustment can be made in the open . . . without interference of any kind. Fan, fan motor, and valve are also immediately accessible behind the fan panel which snaps off in a jiffy.



25  
cu. ft.

## Stainless Steel

## REACH-IN REFRIGERATOR

Stainless steel inside and out . . . and welded into one single, solid unit! Insulation is pounded into every nook and corner, blanketing every square inch of the cabinet. Not a stick of wood is used anywhere . . . there are no small areas of non-insulated wood framework. Never before has anyone manufactured a refrigerator fixture so fine, so rugged, so durable. Koch manufactured thousands of stainless steel refrigerators for the Navy, learning through expensive trial and error methods just how to work with stainless steel. No one else has this background. That is why Koch methods of construction and manufacture are being patented . . . why no one else can build a refrigerator like the Model 4725.

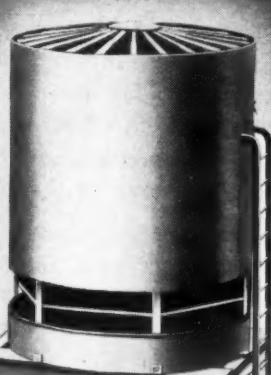
Today these fine new refrigerators are being produced in increasing quantities. Soon they will be shipping to Koch distributors all over the world . . . giving users in all types of climates a combination of lifetime service, easy-to-clean beauty, and surprising economy. Write for information, now.

# KOCH Refrigerators

Since 1883

NORTH KANSAS CITY, MISSOURI

ONLY COEY COOLING TOWERS  
BRING YOU THE HIGH EFFICIENCY OF



### FLOATING FILM

Roger's "COEY" Floating Film Cooling Towers apply a cooling principle widely endorsed by engineers and contractors, bring you high efficiency in cooling tower units.

HIGH CAPACITY — LOW WEIGHT  
SILENT OPERATION  
CONSERVES WATER  
LITTLE SPRAY LOSS  
ALL-METAL FIREPROOF CONSTRUCTION  
EASY TO MAINTAIN  
(No spray nozzles to clog;  
no baffles to replace)

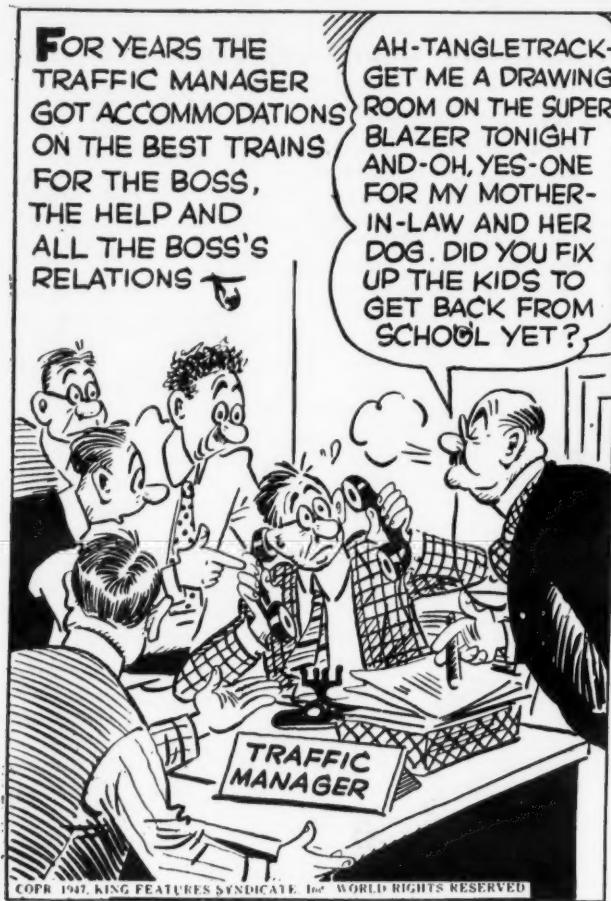
Available in wide range of sizes. Models 20-R and 50-R (capacity range 30 to 175 tons) available for immediate shipment.

For full information including technical description, ratings, list of prominent users, write for Bulletin CT-A.

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Exclusive Manufacturers of  
the Rogers T-Glycol System  
of Chemical Dehumidification

\* Such as  
MUSEUM OF MODERN ART, N. Y.  
PACIFIC MILLS

## They'll Do It Every Time . . . By Jimmy Hatlo



**It's Time To SELL Again!**

# HUSSMANN

Leading the Way to Complete  
IN FOOD REFRIGERATION EQUIPMENT

Stores, Restaurants, Hospitals, Clubs, Institutions — everyone handling perishable foods can find the answer to their needs in HUSSMANN Refrigeration Equipment. Each HUSSMANN unit is backed by the know-how that comes with years of experience — the engineering ability to translate know-how into practical applications — and the manufacturing facilities to build dependable products.

In short, the complete HUSSMANN Line is the final answer to every Food Refrigeration requirement in scope and in dependability.

The completeness and quality of the HUSSMANN Line assure satisfaction to the user as well as to those who service the equipment.

**HUSSMANN**  
REFRIGERATION, INC.  
HUSSMANN BLDG. • ST. LOUIS 6, MO.

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### Selling In Reverse

RECENTLY the Electric Institute of Boston sent "shoppers" to appliance retail outlets to buy refrigerators, washing machines, radios, home freezers, toasters, and flatirons.

These investigators differed from the average customer only in one respect; they were *customer-analysts*. Upon leaving the store, they wrote a detailed report on how effectively the store, the displays, the atmosphere, the layout, and the salesman did a job of selling.

This survey revealed a notable failure to bridge the gap between the seller's market and the rapidly approaching buyer's market. In this transition period, when some electrical appliances (notably refrigerators) are still not available for immediate delivery, too many stores and too many salespeople have no interest in the informative selling, which today's customers require and which tomorrow's customers will demand.

For example: 61% of the people who were contacted in this survey for the purchase of an article which was not available for immediate delivery, failed to "remain patient and interested" in the customer-analyst's shopping problem. Only 56% were willing to make a statement about when that appliance would be available for delivery; the other 44% were either unwilling or unable to make a definite statement about availability. Only 50% asked for the customer-analyst's name and address to be added to a waiting list for that appliance.

Sixty-seven per cent of those contacted were enthusiastic about the product they were selling. But their sales talks exuded too much independence and disinterest, after the customer-analyst started asking questions and raising objections to the merchandise. Forty-two per cent of the sales talks were completely uninteresting; 51% were not convincing; 33% of the salesclerks did not even make an effort to offset a customer-analyst's objection; and 48% of the customer-analysts did not even see a good demonstration of the selling features of the product.

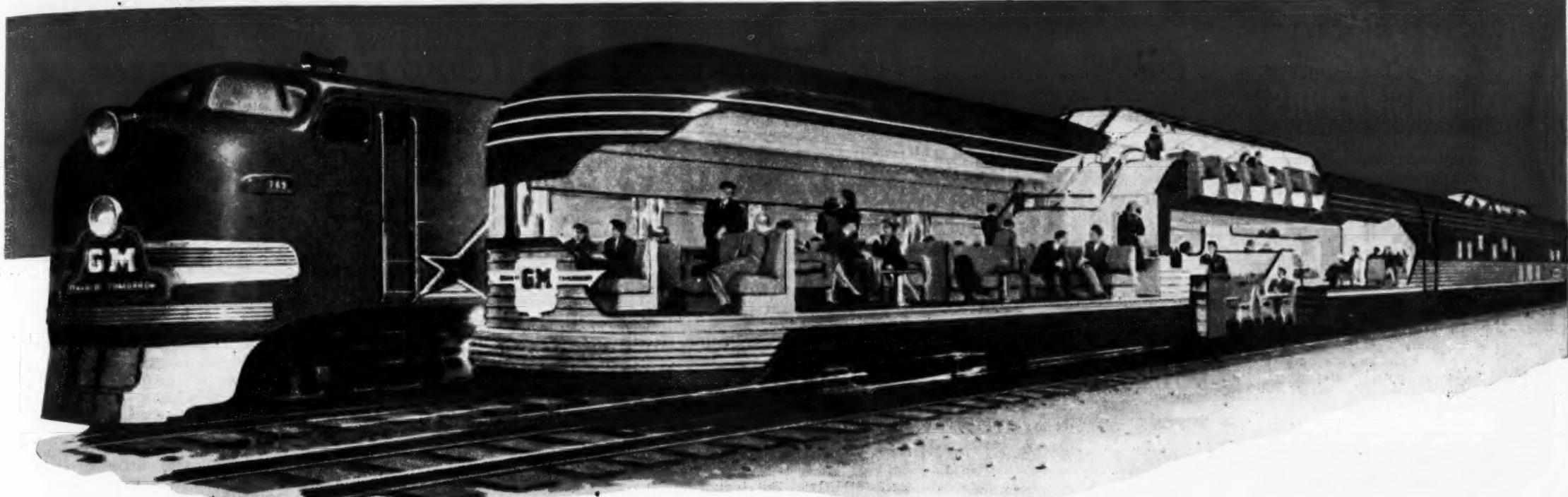
Most electrical appliances involve a fairly large expenditure of capital for the average household. The customer will increasingly demand more information and more interest on the part of salesmen in his buying problems. Yet Boston's customer-analysts felt that 33% of the salesmen did not know the merchandise they were selling.

With respect to the appearance of the exterior of the store and of the interior display area, the fundamental requirements of good housekeeping were observed in a preponderant number of instances. Eighty-eight per cent of the store facades were clean, while 91% were in a good state of repair. Eighty-eight per cent of the windows and window displays were clean; and 91% of them were well-lighted. In 91% of the stores, the lighting, temperature, and humidity were considered adequate and comfortable.

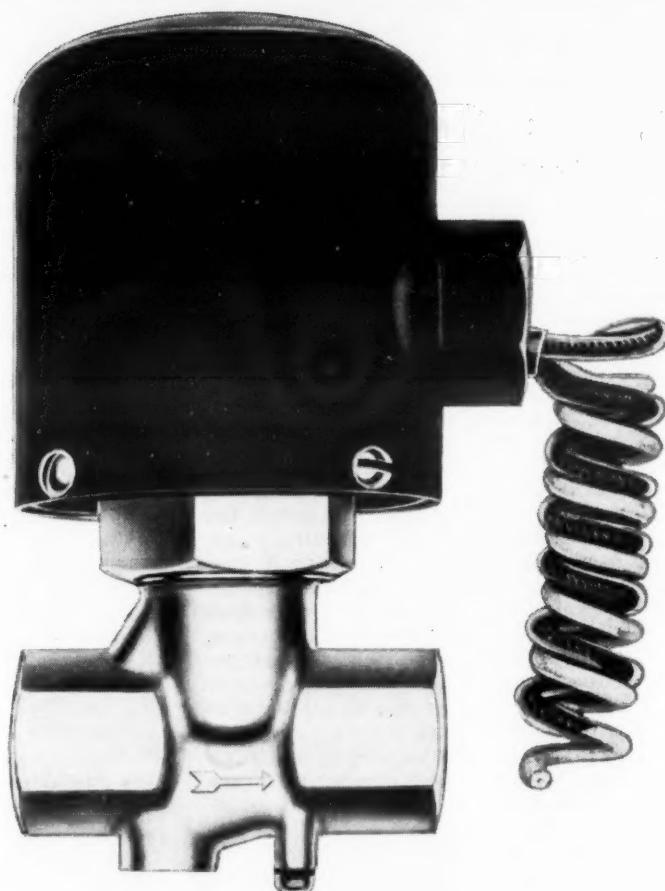
On the other hand, 30% of the interior display areas were considered untidy, while 21% were considered dirty; and in 33% of the stores, the customer-analyst received a poor, first, immediate impression. The more subtle techniques of appealing to the customer through display, of activating his desire to buy by means of attractive, interest arousing displays and advertisements, were not prevalent. Twenty-four per cent of the window displays did not invite or motivate the customer-analyst to enter the store, because of the insufficiency of information about the products they had come to buy. Sixty-four per cent of the interior displays were neither attractive nor effective in *selling* the merchandise on the floor. Only 46% of the electrical appliances in these stores were rigged for an actual working demonstration. Only 24% of the establishments used manufacturer's aids, such as sales literature. It would appear, on the basis of the surveys made for the Boston Electric Institute, that the following conclusion may be drawn:

THE FOUNDATION FOR EFFECTIVE SELLING IS PRESENT IN THE FORM OF THE ESSENTIALS OF BASIC SALESMANSHIP AND PHYSICAL FACILITIES. HOWEVER, THE STRUCTURE OVER AND ABOVE THIS FOUNDATION IS FLIMSY. SALESMEN ARE "ORDER TAKERS" RATHER THAN "SELLERS."

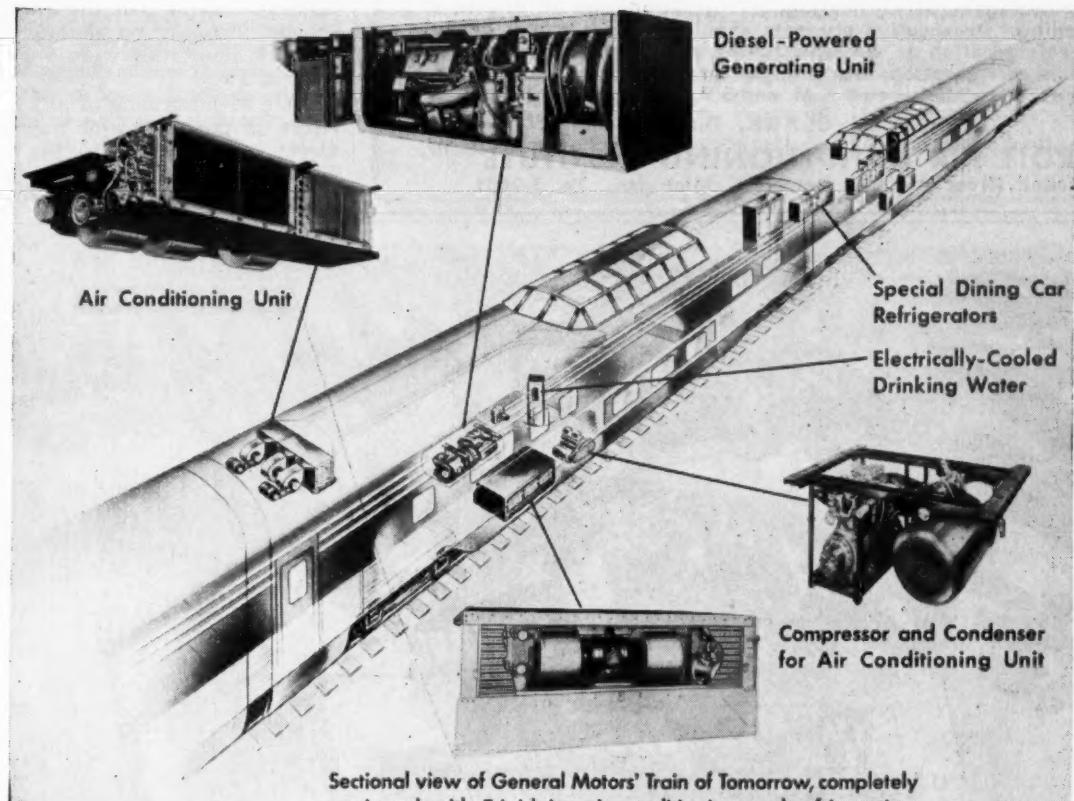
This is bad news, although most of us have known it all along. Confirmed by independent researchers (Public Analysis, Inc.) in one city, it is probably true everywhere. The time has come when we must teach the rudiments of specialty selling all over again.



## DEPENDABLE VALVES DO THEIR PART ON



A-P 73RJ Refrigerant Solenoids—popular with Air Conditioning and Refrigeration Engineers — are doing their part on General Motors Thrilling Train of Tomorrow.



Sectional view of General Motors' Train of Tomorrow, completely equipped with Frigidaire air conditioning and refrigeration.

# General Motors' Thrilling TRAIN of TOMORROW

Railroad travelers for years to come will praise the magnificent effort of General Motors Corporation in creating this newest word in traveling comfort and pleasure. For the amazing Train of Tomorrow is smoother-riding, has more restful roomy chairs, the sleeping comfort is increased, you dine in a roof-garden setting and ride in complete air conditioned comfort. All these and more make the Train of Tomorrow a truly remarkable achievement in vacation or business travel . . . a thrill to see today . . . a joy to experience tomorrow.

And A-P Dependable Refrigeration Valves are standard equipment on this fine new train. Just as A-P contributed to human comfort in the first air conditioned streamliners to race over the rails years ago, so A-P Valves again contribute to comfort in the new Train of Tomorrow.



New Astra Dome a 32 foot observation deck offers a "Giraffe's eye view of landscape and skyscape."

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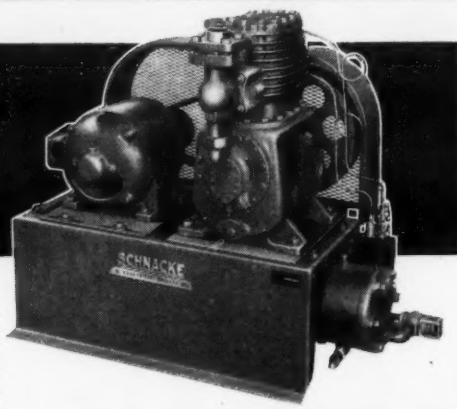
Export Dept., 13 East 40th St., New York 16, N.Y.



**DEPENDABLE** *Refrigerant Valves*

STOCKED AND SOLD BY GOOD REFRIGERATION WHOLESALERS EVERYWHERE • RECOMMENDED AND INSTALLED BY LEADING REFRIGERATION SERVICE ENGINEERS

## SCHNACKE Complete CONDENSING UNITS



SCHNACKE units have replaceable refrigerant-cooled steel cylinder sleeves, complete pressure lubrication, balanced forged crankshafts, individual cylinder liquid relief, individual cylinder valve cage assemblies, built-in suction strainers, sealed crankcase, balanced pressure shaft seal, insert type bearings, water or air cooled heads, and many other advanced features.

Condenser is ASME approved, fin tube, cleanable type mounted in sturdy base. Water control valve and pressure controls installed.

Illustrated above is the "T-C" Model, with capacity from 5 H.P. low temperature to 15 H.P. Air Conditioning. F-C Models to 25 H.P. available; less condenser, from 5 to 50 H.P.

**Our new foundry now makes deliveries on most models possible in one to two weeks.**

Complete engineering data sent promptly upon request.

**SCHNACKE, INC.**

1016 E. Columbia St., Evansville, Ind.

## ANNOUNCING

Classes in THERMODYNAMICS and ADVANCED AIR CONDITIONING are to start on a part time basis and will meet Tuesday and Thursday evenings starting July 8th, 1947. Full time classes will start August 18, 1947. The course will cover fundamental thermodynamics, power generation, heating, refrigeration, and all phases of air conditioning. Prospective students should be high school graduates, basic refrigeration or air conditioning school graduates, or have experience in refrigeration, heating, or air conditioning. G. I. approved. Write, or call between 9 A.M. and 5 P.M. daily, for information.

GEORGE H. CLARK, Director,

DETROIT AIR CONDITIONING INSTITUTE  
4125 Grand River Avenue, Detroit 8, Michigan. Te. 3-2961.

## ASHVE Hears of Experiments Indicating Need To Revise Effective Temperature Concept

CORONADO, Calif.—Basic concept and actual scale of the "effective temperature" used in air conditioning probably need revision, judging from studies of comfort reactions of 275 workers in an air conditioned office.

These views were presented before the semi-annual meeting of the American Society of Heating & Ventilating Engineers here by Prof. Frank B. Rowley, Prof. Richard C. Jordan, and Warren E. Snyder, all of the mechanical engineering department of the University of Minnesota.

### Survey Made In M-H Offices

Conclusions were based on studies of data obtained from an earlier cooperative survey made in the air conditioned offices of Minneapolis-Honeywell Regulator Co. occupied by 275 employees, both men and women, ranging in age from just under 20 years to 70 years.

One of the reasons for suggesting a change in the concept of effective temperature, according to the authors of the paper, lies in the fact that with a constant dry bulb temperature comfort reactions of the 275 workers showed virtually no change although relative humidities were varied from 35% to 60%.

"The seeming lack of any humidity effect on the feeling of warmth is in direct contradiction to the effective concept and could be ascribed partly to the many factors entering into an

individual's feeling of warmth; factors which could be controlled in the laboratory but not in a business office.

"Some of these factors are solar radiation, health of the individual, drafts, attitude toward the test, and variation in the amount of clothing worn from day to day."

Original data on which this study was based were obtained from the employees' answers to questions. To avoid the problem of entering or leaving shock, the information as to the employees' comfort reactions was checked at 10:30 a.m. and 3 p.m.

Although the employees in the original survey could note seven possible reactions to the room conditions—ranging from "severely cool" through "severely warm," data for this latest study was grouped under three classifications: "cool," "ideally comfortable," and "warm."

Some of the finer distinctions in the original seven reactions were found to be "confusing" or "erratic," explain the authors, who decided to use just the three classifications.

Pertinent data and answers to the questions were coded and punched on International Business Machine cards which were then sorted according to inside dry bulb temperatures and inside relative humidity ratings. Extremes in the data were too small to carry any weight so these were discarded to leave the temperature range under study from 70° to 80° F. and the relative humidity from 35% to 60%. Various graphs were then plotted from the data.

"A study [of three graphs with respective effective temperatures of 37°, 70°, and 72°] showing the variation in the percentages of employees feeling cool, ideally comfortable, and warm for a given effective temperature reveals that in every graph the percentage of occupants feeling warm decreases and the percentage feeling cool increases as the humidity increases with corresponding decreases in the dry bulb temperature, even though the effective temperature remains fixed," the authors say.

"These changes in the percentages would not be expected at a constant effective temperature; for, by definition, an effective temperature is one which indicates conditions of equal warmth.

"The fact that these curves do show that the employees studied became cooler as the humidity increased and dry bulb temperature decreased, despite a constant effective temperature, would indicate that with this particular group of employees, humidity has less effect and dry bulb temperature more effect on their

feeling of comfort than is shown by the effective temperature relationship."

Other graphs prepared by the authors showing a constant dry bulb temperature with the relative humidity varying from 35% to 60% indicate, they believe, that there was no appreciable change in the comfort reactions as the humidity was increased.

### Reactions Were Variable

Another breakdown of the data according to the reaction of some of the individual employees showed "clearly that there was little correlation in the feelings of warmth between one person and another, and, in some cases, little correlation between the feelings of warmth and condition of temperature and relative humidity for one person," the authors found.

A further question arose during the study of individual reactions when it was found that the total number of votes varied widely from person to person, ranging from eight to 90 among the individuals studied. . . .

"While this study indicates that there was no apparent effect of humidity on comfort for this office and group of employees, the question arises as to whether or not the same relationship would hold true in another office with a different group of employees," the authors concede.

# 2 GOOD NAMES ARE BETTER THAN ONE

**REVERE METALS help keep your food fresh**

If food could think, what do you suppose it would think about while waiting in the nice, cool, safe and sanitary refrigerator? It might worry about what would happen after it is taken out, but it certainly could not fear that anything unpleasant would occur while it is inside, where the low temperature puts it into a comfortable, healthy sleep. For the remarkable benefits of refrigeration Revere can take care of the credit, because it supplies so much copper and brass and bronze to refrigerator manufacturers. As much as 2½ pounds of copper and its alloys may be used in a single box, much of it in the form of tube and sheet. Tube is of course essential to the type in which the refrigerant circulates in the walls. Quick conduction of heat, easy workability, and resistance to corrosion.

**REVERE**  
COPPER AND BRASS INCORPORATED  
Founded by Paul Revere in 1801  
230 Park Avenue, New York 17, New York

are three of the many advantages of copper and copper alloys that make them ideal for refrigeration applications. Brass and bronze are used for evaporators, for automatic control mechanisms, and for hardware, to assure long, trouble-free service. To manufacturers of refrigerators and freezing units for home and commercial use land to builders and operators of commercial ice plants, as well. Revere offers mill products such as sheet and plate, roll and strip, rod and bar, tube and pipe, extruded shapes and plate, roll in copper and its alloys. Mill products are also available. The Technical Advisory Service will gladly cooperate with manufacturers in such matters as selection, specification, and the like.

## YOUR NAME AND REVERE DRYSEAL COPPER TUBE

REVERE'S national advertising in The Saturday Evening Post, Business Week, Fortune and many other widely-read publications constantly tells your customers that the name Revere on the products you use is proof of their high quality. Thus Revere not only gives you the finest dehydrated copper tube—dry, clean, dead soft and sealed—but backs it up with hard-hitting promotion. Your good name plus the name Revere is a sales-getting combination that's hard to beat.

Revere Dryseal Copper Refrigeration Tube is made of deoxidized copper (99.9+ % pure) and is kept oxide-free by special processing methods. Each length is carefully dehydrated during manufacture, and then immediately sealed at both ends to keep all moisture and other foreign particles out. Because Revere

Dryseal is dead soft, it is easy to bend and will not split when flared at the ends.

Revere Dryseal Copper Tube is made for refrigeration, air conditioning, heat control and other services. It comes in sizes from  $\frac{1}{8}$ " to  $\frac{3}{4}$ " O.D., with .035" wall, and is standard in 50-foot coils.

You can get prompt delivery on Revere Dryseal from leading distributors throughout the country.

**TO MANUFACTURERS** — There is a Revere Distributor near you who is prepared to give you cooperative service on your needs for Revere Copper Tube, Brass Rod, Welding Rod and other standard Revere products.

**REVERE**  
COPPER AND BRASS INCORPORATED  
Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York  
Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N. Y.—Sales Offices in Principal Cities, Distributors Everywhere.

**REFRIGERATION  
service men  
ATTENTION!**

**GREATER PROFITS FOR YOU  
AND YOUR CUSTOMERS  
WHEN YOU  
INSTALL**

**Taylor  
BEER CONTROL SYSTEMS**

positively eliminates waste and drawing of flat beer. Here is the greatest advancement of dispensing equipment developed within the industry. Taylor Systems can be easily installed in any type refrigerated cabinet. You can't afford not to render this service to your customers!

**SEND FOR  
DESCRIPTIVE  
LITERATURE!!**  
**TAYLOR**  
Precision MFG. CO.  
1299 PARSONS CT.  
CLEVELAND 16, OHIO

**TEMPERATURES  
Made To Order  
with  
TYphoon  
AIR CONDITIONING**

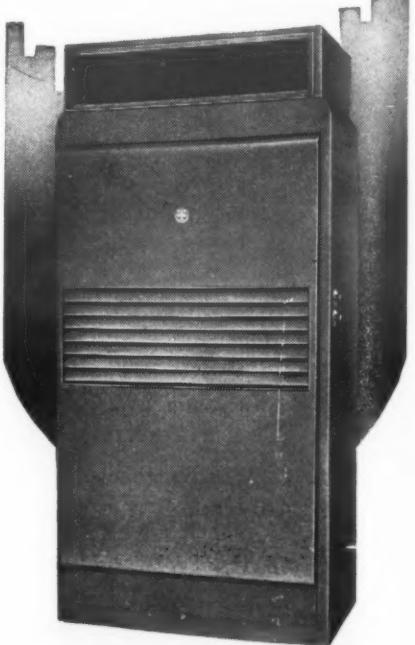
The handsome compact appearance of the TYphoon self-contained air conditioning unit belies its rugged construction—an engineering achievement backed by over 30 years of practical experience.

Each unit is made to deliver full rated capacity under most difficult conditions—12,000 BTU's of air conditioning performance for every ton of rating. TYphoon's exclusive large flow-turn cooling coils and the oversized all-copper condenser, are two of the many features that make for trouble-free performance and maximum customer satisfaction.

**TYphoon Units  
ARE BEING PRESOLD BY  
NATIONAL ADVERTISING**

*A few dealer territories are still open*

*Write for complete information*



Complete air conditioning:  
Cooling, filtering, moisture removal, non-draft circulation  
—easy to install—low up-keep—3-ton, 5-ton, 7-ton sizes  
—full rated capacity.

**Dept. 212**  
**TYPHOOON AIR CONDITIONING CO., INC.**  
Division of Ice Air Conditioning Co., Inc.  
794 Union Street Brooklyn 15, N. Y.

## Sears, Roebuck & Co. To Completely Air Condition 3 Stores In St. Louis

ST. LOUIS—Interested in the possibilities of cutting down markdown loss and merchandise cleaning bills through complete air conditioning of all stores, Sears, Roebuck & Co. is completely air conditioning three large stores, two located in St. Louis and the other a brand-new unit recently completed in East St. Louis, Ill.

Each of the air conditioning systems include both oil dust filtering equipment, and Westinghouse electric precipitrons, which, combined with recirculated air, are expected to remove every vestige of dust and soot peculiar to the St. Louis area from the store interiors.

In fact, in the remodeling of the two St. Louis stores, at Kingshighway and Easton Ave., and at Grand and Gravois, the Sears chain has completely been bricked shut, eliminating windows altogether. Indirect fluorescent lighting has been installed in the two St. Louis stores, and "windows" are merely display units around the street floor.

Typical of the large-scale air conditioning installed in all three stores is the system in the East St. Louis department store, at 10th and State Sts. Air conditioning equipment here consists of a separate 100-ton and a 60-ton York system, each equipped with oil and electronic dust filters, and capable of being operated independently.

On excessively hot days, both of the York systems may be required to keep the store at a comfortable 80° F.; however, it is anticipated that the 100-ton unit is sufficient under anything but record temperatures.

The new East St. Louis store is completely windowless, and has three air conditioned floors, amounting to more than 87,000 sq. ft. Through constant recirculation of store air except during crowded shopping periods such as the weekends, combined with the dust precipitators, it is expected that loss caused by marking down soiled merchandise for quick sale will be entirely eliminated.

General Installation Co., St. Louis, handled the installation of the air conditioning system.

## \$1 Million 'Powerhouse' Candy Plant Will Utilize 4 Separate Air Systems

CHICAGO—Four separate air conditioning systems will be used to maintain special temperature and humidity conditions in the four sections of the new 100,000 sq. ft. plant to be opened here this summer by the Walter H. Johnson Candy Co., maker of the "Powerhouse" candy bar and other confections.

Information supplied to the Refrigeration Equipment Manufacturers Association revealed that the \$1,000,000 plant will be air conditioned throughout, from executive offices to candy wrapping rooms.

The four systems are capable of operating singly or in combination to provide the necessary cooling, heating, filtering, and humidifying of the air supplied to the four sections, it was said.

### Minneapolis-Honeywell Opens Office In Butte

PORLTAND, Ore.—Expansion of home construction and industry in Montana has led to the opening of a Minneapolis-Honeywell Regulator Co. office in Butte, according to John B. Banks, northwest regional manager of the company.

James A. Reynolds, a native of Montana, has been transferred from the company's Seattle office to serve as branch manager for the new territory.

Cities included in the territory of the new Butte office are Helena, Missoula, Bozeman, Anaconda, Cut Bank, and Shelby.

### Carrier Corp. 12-Month Report Shows Earnings of \$1,570,336

SYRACUSE, N. Y.—A net profit of \$1,570,336, including carry back tax credits, for the 12 months ending April 30, 1947, has been announced by the Carrier Corp.

During the same 12 months, completed contracts and sales amounted to \$37,450,297, the company reported. Orders booked totaled \$46,120,124.

Carrier's backlog of unfilled orders at the end of the period stood at \$31,932,823 as compared to \$23,255,455 at the beginning.

Each section will have an individual air circulation system because of the varying temperature and humidity conditions required and to prevent transmission of odors or foreign matter from one section to another, according to the company.

A temperature of 80° F. with 50% humidity will be maintained in the executive offices, conference and miscellaneous rooms, and in the section where fudge will be prepared.

A temperature of 60° F. with 45% humidity is required in the section devoted to the manufacture of Powerhouse candy bars. Direct expansion coils will be used in this section, it is said, to maintain proper temperatures within the enrobing tunnel where candy with chocolate coated centers is cooled.

Water from city mains will be chilled and used throughout the rest of the plant.

In the candy "slabs," large metal tables upon which the candy is allowed to cool after its preparation in the kitchen, water, chilled by refrigeration to 35° F., will be employed to hold a table surface temperature of 37° F.

The new plant, according to the Johnson Co., will provide about 50% more operating space than the old plant. The first of the two stories contains production equipment and offices. The second will be used to store raw materials and be available for expected expansion.

## The NAT Corporation of Kansas City announces

### THE NEW NAT (self contained)

### AIR CONDITIONER

The Nat Air-conditioning Unit's unique design, based on 17 years of research directed by Nathan Barabian, makes it—

*The Answer to the Service-Man's Prayer*

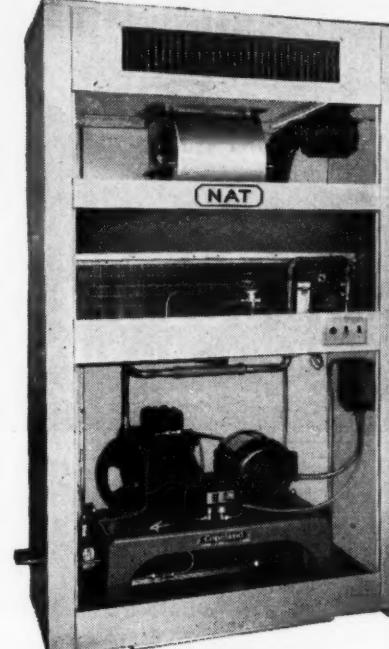
All working parts are accessible without having to tear down the cabinet. A saving of time and labor.

**The NAT Unit comes in 3 sizes:**  
**3.0, 4.2 and 5.4 Tons**

**Sold through exclusive dealers and distributors  
some territory still open — inquiries invited**

### The NAT Corporation

2710 McGee Trafficway • Phone HA. 1892 • KANSAS CITY, MISSOURI  
The Nat Corporation also manufactures the NAT Suspended Gas-Fired Unit Heater



Combines Appearance and Performance with PRACTICAL Design

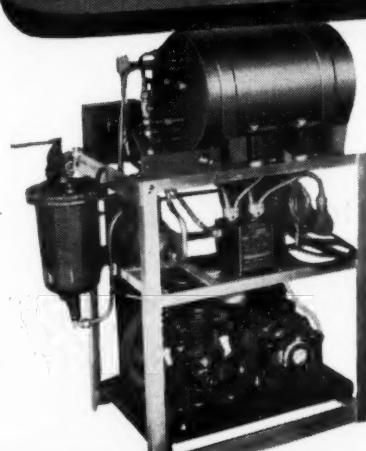
Finished Cracked Brown or Hammered Grey Baked Enamel

Sold through exclusive dealers and distributors some territory still open — inquiries invited

### The NAT Corporation

2710 McGee Trafficway • Phone HA. 1892 • KANSAS CITY, MISSOURI  
The Nat Corporation also manufactures the NAT Suspended Gas-Fired Unit Heater

## There's the CRYSTAL-FLO For Any Job! Right Carbonator



### Only Crystal-Flo Offers All These Advantages

#### Carbonation:

Water is pumped into stainless steel carbonating tank containing CO<sub>2</sub> gas at 120 lbs. pressure. Water is hydraulically separated into a fine mist which immediately absorbs CO<sub>2</sub> and gives excellent carbonation without a waiting period.

#### Convenience:

No belts, pulleys, gears or lubrication required. No bearings except in motor. Cleaning of check valve water strainer and maintenance of gas supply only attention required.

#### Economy:

Water pump runs only when water is being drawn. Cost of gas virtually the only cost.

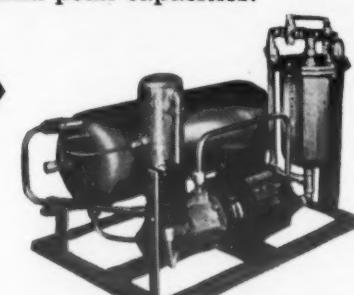
Crystal-Flo Carbonators provide the highest quality soda-water at a lower cost. Installation is unusually convenient, operating expenses low, and the unique Crystal-Flo carbonation principle assures the highest efficiency.

#### Model "R" Refrigerated Carbonator

Compact in size, stainless steel heat transfer and carbonating chambers. The Kluecker method of simultaneously refrigerating and carbonating produces an unusually high carbonation and dispenses drinks at an exceptionally cold temperature. In three sizes—for ordinary and peak capacities.

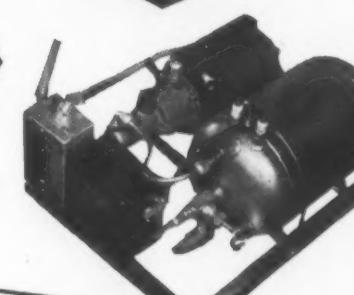
#### Model H4 Carbonator

Capacity 35 to 50 gals. per hour. Space required 30" x 17" x 20". Carbonating tank can be placed in cooler if desired with motor and pump outside. Water filter optional.



#### Model LB Carbonator

The greatest value in the field today. Capacity 20 to 25 gals. per hour. Space required 16" x 20" x 12". Single, compact frame without filter. Small, highly efficient, and low and competitive in price.



#### Under Bar Dispenser

Simultaneously mixes all soft drinks in continuous flow. Drinks mixed in air. Stainless steel. Saves valuable top bar space. Fits under any counter.

**Electrimatic**

2100 INDIANA AVE CHICAGO 16 ILLINOIS

**AMP CORPORATION**  
Manufacturers of Crystal-Flo Equipment

**ACME** INDUSTRIES  
JACKSON, MICHIGAN  
*Offices in principal cities*



Wilson "ZEROSAFE"  
Model FF-15 Farm Freezer

## WILSON "ZEROSAFE" FREEZERS ARE TIME-TESTED

### WILSON "ZEROSAFE" REACH-IN FARM FREEZERS ARE YEARS AHEAD

Since 1939 enthusiastic users of Wilson "ZEROSAFE" Freezers have acclaimed the Wilson-pioneered features of front-opening convenience, adequate sizes, real usability and long, efficient life. Now brought to the peak of its development as a truly great farm and home freezer, the "ZEROSAFE" combines all the great TIME-TESTED Wilson features in ten new models ranging from 15 cu. ft. to 120 cu. ft. in capacity, finished in the gleaming beauty of white baked-on enamel, ready to win new thousands of life-long "ZEROSAFE" friends. If your merchandising plans include the selling-and-servicing of a complete line of modern freezers that are outstanding in quality and leadership, let's exchange information today. Address Desk 11.

**WILSON REFRIGERATION, INC.** SMYRNA DELAWARE

**ARCADE**

Catalog and prices  
on request.

**ROCKWELL**

ARCADE MANUFACTURING DIVISION  
ROCKWELL MANUFACTURING COMPANY • FREEPORT, ILLINOIS

## Promoting Self-Service, Unusual Commercial Distributor Proves It Pays Off In Own Firm

By C. Dale Mericle

SALT LAKE CITY—A strong advocate of self-service displays in the stores of its customers, Moore Butcher Supply here, distributor for Servel, Friedrich, American Coil, Perfecold, and other lines, practices what it preaches by having extensive self-service displays in its own store.

"It works, too," comments R. W. Moore, who heads up the firm's refrigeration operations. "Recently a salesman came in to see us, and had to wait about 30 minutes before one

of us was free to talk. He started looking over our display of knives, and half an hour later he had bought \$25 worth of cutlery to ship home."

There are a number of angles to this self-service operation; indeed, to the whole operation of the company, which is unique in several respects.

Moore Butcher Supply is owned and operated by seven brothers and sisters and their mother, Mrs. Louella A. Moore. It was founded in 1930 by the father, C. E. Moore, who died in 1944, and the present operators include W. V. Moore, in charge of sales; R. W. Moore, in charge of refrigeration engineering; Gladys Moore, office manager; Ardith Moore Cloughley, who with her husband Arthur is setting up a branch in Boise, Idaho; D. Eugene Moore, city salesman; Charles C. Moore, in charge of purchasing; and Keith A. Moore, who is still in school and works part time in the shipping department.

Besides handling the full range of commercial refrigeration and butcher and store supply equipment, Moore's also installs locker plants featuring All-Steel Equipment lockers, and is a dealer for the Jaden line of cold water air conditioning units.

The lift is the type used in auto service stations, altered by the substitution of a sheet steel platform for the conventional drive-on tracks.

"It's paid for itself twice in the two years we've had it," said Mr. Moore.

Another big time-saver and profit maker is the self-service display in the store.

"We are greatly interested in promoting self-service operations by our merchant customers. We've done it

(Concluded on next page)

### Lift Saves Man-Hours



Converted from the type used for autos, this hydraulic lift pays for itself every year by saving man-hours for Moore Butcher Supply. Vaughn Cox (on the truck) and Homer Proctor wait as Moyle Anderson checks a delivery.

### Trips to Headquarters

An alert organization, the company does not wait for factory representatives to call with news of the latest factory plans and developments. Rather, the boys in the firm make frequent trips to headquarters of their suppliers and to other sections of the country to find out for themselves just what the trade is doing.

"By the end of last year," declared R. W. Moore, "we realized that the seller's market had ended. We proceeded to put our house in order for selling. We cleaned out all our outstanding purchase orders to bring them down to our bona fide needs. This helped both the manufacturers and ourselves. We've made a lot of progress in getting our inventory balanced.

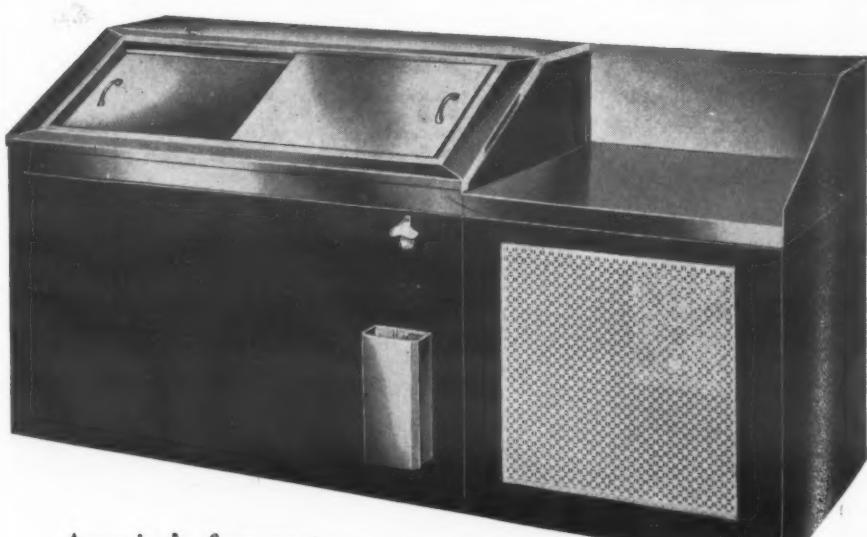
In addition we started conducting sales schools every Friday night for all personnel to prepare them for the selling job we face."

The firm's sales policies are backed

### Beauty is more than skin deep in the

## NATIONAL DRY BEVERAGE COOLERS

—it predominates in performance and endurance, too.



America's foremost—  
With the all stainless steel top

In 4 popular sizes: 15, 23, 31 and 39 cases. Compressor compartment is removable for remote use and can be purchased separately.

**NATIONAL COOLER CORP.**

1600 Woodland Ave.,

Cleveland 15, Ohio

## Distributor's Customers Can Help Themselves



Besides featuring all types of commercial refrigeration equipment and allied lines on its big display floor, Moore Butcher Supply of Salt Lake City fills display islands with small items like butcher knives for self-service sales. A salesman who called on the firm once bought \$25 worth of knives while waiting to see one of the Moore brothers.

## Sales of Cheese Jump 400% After Market In Idaho Installs Open Self-Service Case

(Concluded from preceding page) ourselves for 2½ years on such things as butcher knives, and other items and have found that self-service increases sales tremendously. For example, different people have different ways of testing knives. Here in our store they can take their time testing them, and when they appear ready to make their purchase the salesman approaches them."

Not only are the customers better satisfied, but much time is saved for salesmen, comments Mr. Moore.

MERCHANTS which the Moore firm has supplied with open type self-service refrigerated cases have reported considerable increases in sales, also, according to Mr. Moore.

The Don Greaves Market in Preston, Idaho, for example, claims a 400% increase in the sale of cheese, thanks to an open 11-ft. case which was installed about six months ago, said Mr. Moore.

"The increase in sales has returned this operator's investment in the case in the first six months, and he's using only a portion of the 11-ft. case for cheese. This sales increase, furthermore, wasn't merely a thing of curiosity, for sales have held up consistently during the six-month period."

### Frozen Foods Slow

Mr. Moore's glowing account of Preston market's success on cheese sales stands out in sharp contrast with his report on the frozen food situation in the territory.

"There is a growing resistance to frozen food merchandising here," he says. "One-and-a-half to two years ago most merchants were very anxious to get into the frozen food business. They all bought cabinets. But business has dropped off now. We learned just recently that a man in Idaho who operates four stores was considering adding frozen foods."

He contacted a relative who already had a frozen food case to get advice on going into this field. The relative told him not to.

"I believe the future of the frozen food industry will be determined by the quality and the price of the products offered to the public," said Mr. Moore.

And as for home freezers, he believes that the greatest need is for a 6-cu. ft. freezer selling at a "reasonable" price. The market for this size box is not limited to urban dwellers, but also includes the farm family, according to Mr. Moore, who says he doubts that the farmer needs a big freezer.

In general, however, the Moore firm is looking forward to continued success in its operations.

"We've missed the recession so far this year, and this is the centennial year in Salt Lake City. This city depends a lot on the tourist trade, and the celebrations this year should prevent any recession," says Mr. Moore.

### Wilmes Takes Midwest Territory for Remco

PITTSBURGH—Charles W. Wilmes has recently joined the field sales force of Remco, Inc., according to K. M. Newcum, president.

Mr. Wilmes, formerly president and general sales manager of Clayton Appliance & Service Co., Clayton, Mo., will represent Remco in Missouri, Kansas, Colorado, Illinois, Indiana, Kentucky, and western Michigan.

C. W. Wilmes

**PLAYSAFE**

USE  
CHICAGO SEALS  
and  
VALVE PLATES

ATLANTA — The partnership of C. M. Dodd and I. E. Silvey is operating two retail appliance stores—one here, and the other in Norcross. The Atlanta store is the Buckhead Appliance Service at 281 E. Paces Ferry Road. The Norcross store has Mrs. Ben F. Mitchem as manager.

### Tracy-Wells Co., Columbus Distributor, Reorganized

COLUMBUS, Ohio — Reorganization of the officers of the Tracy-Wells Co., distributor here, was recently effected by the firm's board of directors, William P. Tracy, president, has announced.

Under the new set-up, Charles O. Tracy, formerly treasurer, has become a vice president and manager of the Appliance Distributing Co., a division of Tracy-Wells.

John P. Castner has been named a vice president, but will continue to handle the duties of merchandise manager.

John E. Howell, formerly assistant secretary, was promoted to secretary.

Erwin H. Obrock, formerly assistant treasurer, succeeds Mr. Charles Tracy as treasurer.

Robert Hagar continues as executive vice president.

### Dodd and Silvey Have Two Georgia Stores

ATLANTA — The partnership of C. M. Dodd and I. E. Silvey is operating two retail appliance stores—one here, and the other in Norcross. The Atlanta store is the Buckhead Appliance Service at 281 E. Paces Ferry Road. The Norcross store has Mrs. Ben F. Mitchem as manager.

## Vets' Hermetic Repairs For Trade Boom In Year

NEW YORK CITY — Technical Refrigeration Specialists at 3502 Third Ave., the Bronx, a company organized by three Navy veterans, celebrated its first anniversary June 1, reporting a steady growth in business that is now causing the firm to seek new quarters for expansion.

The three partners who operate the business—Sidney Weiner, Henry Ehrenkranz, and Murry Wolfeld—started the business with a G.I. loan of \$3,000 from the Modern Industrial Bank, and used the money to purchase equipment and a truck. Now the firm has five employees—all veterans.

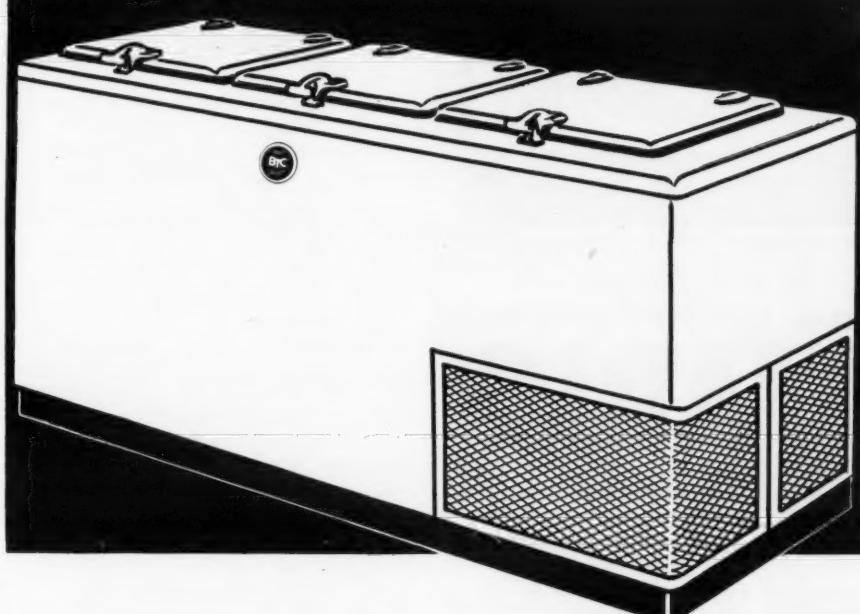
Technical Refrigeration Specialists does specialized service work (sealed units only) for other refrigeration companies. All work is done—as the company letterhead states—"for the trade only."

The three partners worked together in civilian life before the war. They worked on a job together for the War Department in Bermuda. They all enlisted in the U. S. Navy in Bermuda and went their separate ways (the Navy being no respecter of such comradeship), one to Cuba, one to Newfoundland, and one to the aircraft carrier Bennington. The partners all continued to do refrigeration work in the Navy, and received honorable discharges a month apart.

They believe they have one of the best equipped refrigeration shops in New York City, and have developed an electrical testing device which they plan to market.

## BTC FOOD FREEZERS

Rapid Freezing and Constant Temperature Storage



Engineered and designed for the exacting job of low temperature, food freezing, the BTC Food Freezers embody all recommended performance standards for home and farm food freezers.

BTC Food Freezers are made by The Brewer-Titchener Corporation, specialists in metal fabrication for over 100 years and manufacturer of the famous BTC Evaporator Plates.

The BTC Food Freezer line includes four sizes: 10, 12½, 18 and 23 cubic feet, in dimensions of 74", 76", 98½" and 121" long by 28" wide by 33½" high; will go through standard doorways easily; and with ½ hp., 110-120 V. and ½-hp., 220 V. motors.

A limited number of dealer and distributor franchises are available. Write for complete bulletin.

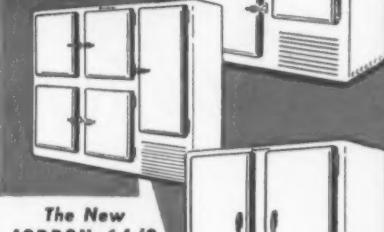
THE BREWER-TITCHENER CORPORATION  
Crandall-Stone Division--Binghamton, N. Y.

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from 23 cu. ft.  
to 56 cu. ft.  
IN ALL  
TEMPERATURE  
RANGES



\*JORDON Dealers have a full line

\*JORDON Dealers have a smart line

\*JORDON Dealers have a promotion line

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And when you can back your sale with fine quality and sound engineering, you are building the one thing that counts most in any business—customer confidence and lasting satisfaction.

JORDON dealers today can satisfy every prospect from a large home or farm to a giant supermarket. And because JORDON is a real promotion line, with many "selling" features, JORDON dealers are in a position to work new and wider markets, creating new business, increased volume, larger profits.

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VALVES AND FITTINGS  
for Refrigeration  
NORTHERN INDIANA BRASS CO.  
ELKHART, INDIANA

## First-Hand Home Freezer Experience Best Help For Salesman In Selling the Consumer

By R. B. Trick, Home Freezer Sales Manager,  
Kelvinator Division, Nash-Kelvinator Corp.\*

My subject is "a new and better way of living for Americans." The development of the home freezer, the newest home appliance, and the growth of the frozen foods industry, mean just that—*better living*. The home freezer and frozen foods are going to have a far-reaching influence on the American home.

This discussion is concerned primarily with the means of getting this great new product, the home freezer, into the hands of the consumer. Anyone who has had the day-after-day experience of life with this appliance can dream for hours about the new era it is ushering in.

As retailers, however, your first interest is in selling goods. And believe me, the home freezer, great as it is, is going to require some sales effort. Its transition from a little-known "luxury" to an everyday necessity is going to take a great deal of a special kind of selling.

It is fitting to start with the trend of the commercial frozen foods industry and its influence on the sale of home freezers, not only today, but for years to come.

Commercially frozen foods as we know them today started back in 1930. It was in that year that Clarence Birdseye first froze five

\*Talk given before the Annual Spring Conference of the Bureau of Radio & Electric Appliances of San Diego, Calif.

hundred thousand pounds of food in retail size packages. Of course for years prior to that foods had been frozen, but not for retailing purposes. The growth and expansion of the commercial frozen food business may be seen in the fact that last year frozen foods totaled about two billion pounds. Much of this increase has come in the last 10 years.

Another development which greatly stimulated frozen food usage started in the Western States in the middle 1930's. This was the creation and expansion of locker plants. They started primarily as a service to farmers, bringing fresh frozen foods to farm homes for the first time.

Locker plant growth has been actually amazing. In 1935 there were only 250 locker plants. Now there are well over 8,000, with over 3,000,000 individual lockers, and 75% of the locker users are farmers.

During the war, many colleges and private laboratories extended and expanded their research in frozen foods. They developed many new techniques in freezing foods, especially those that had never before been frozen, such as baked goods, precooked foods and many leftovers. Food freezing, both from a commercial and consumer standpoint, has captured the public fancy.

There is a sound reason for this consistent growth—"frozen foods are

better." Freezing simply suspends fresh foods in their normal fresh state, without cooking, without change of color, and without the use of preservatives. They are easier to use in the home and save the housewife time and labor. The frozen food industry is certainly on solid ground, and the basic economics behind the business point to a bright future.

With this development and expansion of frozen foods, a demand naturally has developed for household freezing and storage facilities. It was in the late 1930's that the home freezer was first developed and advertised as such.

However, home freezers in the beginning had slight appeal except to the farmer or to the hunter and fisherman. In fact, in the late 1920's a home freezer was an extremely difficult item to sell. But as the locker plant and frozen food business expanded, and the war years made people conscious of frozen foods to a greater degree, home freezers began to be well talked about and its convenience, utility, and economy won many enthusiasts.

### Four Big Advantages

They found that a home freezer offered them four big advantages—

1. A better selection of food.
2. Better quality of food.
3. More time to enjoy living.
4. All-around economy.

They found they were able to "eat what they wanted, when they wanted it."

Food quality was better because frozen foods are foods picked at their prime and retained at the peak of freshness regardless of season.

Time and effort is saved with a home freezer, and shopping for food is an occasional expedition instead of a daily chore.

Money is saved through purchasing local crops when quantities are plentiful, prices low, and quality best. Waste is minimized through freezing of leftovers.

With all these advantages, it would seem that the home freezer market is a very substantial one, and that it should be just a matter of building freezers and taking customer's orders. I think by now that many of you have found it to be quite a different thing.

Let's examine the state of the market and the best sales approach to this undeveloped field.

### Food Supply Abnormal In War

Most of the surveys and estimates of the home freezer market, compiled during the war, were influenced by abnormal food supply conditions. Actually, it hasn't been possible to appraise the market accurately until just recently, owing to controls on foods. Although there are still many questions unanswered, we are now in a much better informed position than only a few months ago.

Before taking up the specific market for freezers as we know it today, I would like to make sure we all agree on the proper perspective on the frozen foods picture and the home freezer industry.

While the frozen food industry is expanding, as I have already noted, it has a long way to go before it assumes its place as a major force in the food production of this country. It represents today just about 3% of the fresh food consumed.

The home freezer is in somewhat the same position. As of the first of this year, there were approximately 300,000 home freezers in use nationally. In other words, only about 1% of the wired homes in America have home freezers.

While many people have talked in

terms of selling two to three million home freezer units a year, immediately postwar, we have never felt that the business would develop that rapidly. And the reason is simple.

When only one person out of every hundred has a home freezer, that person simply cannot talk to enough friends, neighbors, and relatives to build up rapid demand through user enthusiasm that is so necessary in the development of a business.

### Knowledge of Freezer Scant

I believe that if each of you took your own poll of 100 persons in the street in front of your store that very few of them would know what a home freezer is, what it does, or how it is used to advantage. Furthermore, most dealers and salesmen are not too sure about these things themselves.

Let's go back to 1925. We could then have stated these same things about the electric refrigerator. Few people knew what an electric refrigerator was, or what it did, and few dealers knew how to sell them. What happened?

The manufacturers, distributors, and a few prominent retailers found out what the electric refrigerator was and what it did by *using it in their own homes*, and then they were in a position through *personal experience* to tell a convincing story.

The next step was to tell that story to thousands and thousands of families. They set out on a selling crusade with well-trained specialty salesmen. They told these families the story of temperatures and the danger in having food about 50° F. They put their fingers down the ice box drains and showed the housewife the unsanitary conditions existing. They went through the story of mold, yeast, and bacteria, and they covered the lack of proper refrigeration in caves, springs, and cellars that were being used.

So electric refrigerators began to sell in larger quantities—people who had them became enthusiasts. Friends and neighbors saw them, wanted them, and gradually the business was developed.

### Concentrate on Selling Need

The specialty salesman of 1925 devoted 90% of his sales effort to selling the need and usage of an electric refrigerator, and only 10% of his sales effort to selling the brand refrigerator he handled. To a great degree, freezer business must be handled the same way today. We must make sure our prospect understands the need and usage of a home freezer, that is, *any home freezer*.

Now there is one step that is vitally necessary before we can advise a salesman how to sell home freezers. We must make sure we know what a home freezer will do. There is only one sure way to find out all of the advantages that accrue to a user, and that is by using one properly in our own homes.

Therefore, I recommend that all of us who wish to sell home freezers successfully first make sure we have home freezers in *our own homes* so we can know from actual experience what we are talking about. After using one, we become enthusiastic and our convictions are carried along to our salesmen, and by them, to prospective customers.

That is exactly the pattern followed in developing the electric refrigerator business. Eventually, this business will grow to the point where users will be available in enough numbers to spread the word. Gradually, as in the washing machine, the electric range, and the refrigerator business, we will find the need for specialty selling on a reduced basis, and merchandising types of activities will come into play. That, however, is a long way off. *Today our job is one of pioneering a product.*

The first thing we ought to realize is that there are two principal classes of prospects for home freezers. The first group produces all or part of its own food. The second group, com-

(Concluded on next page)



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## Enthusiastic Freezer Users Increase Sales

(Concluded from preceding page)  
posed of typically "metropolitan" persons, buys all its food at local markets.

The first group—the food producers—are those people who are farmers or small town residents who have access to fresh farm products, or the suburban city dwellers who have their own "acre or two." It has been assumed by most people in the trade that the farm and small town market for freezers would be one of substantial proportion.

This I can tell you is a known fact so far as home freezers are concerned. To a great degree today, dealers in small towns have back orders on their books for freezers and will have for some time to come.

The locker plant has pre-sold many thousands of these people on the quality of frozen foods vs. their old method of canning or preserving foods through other means. The locker plant has done an excellent job in building and creating this acceptance.

Our studies indicate few farmers will release their lockers when they buy a freezer for their own homes. This has an important bearing on the sales potential for large-size freezers. It is our feeling that the best service for a farmer is one in which he retains a locker or two at the locker plant. He still would use the freezer at home for storage and incidental freezing of garden surplus, poultry, etc. In this connection, we should consider that 2½ million farmers are now being served by lockers out of the 3½ million wired farm potential.

### City Acceptance Smaller

The acceptance for the freezer in small towns and farms does not follow through, however, to city families. By comparison with the rural market, the acceptance for freezers in large cities is small.

But the freezer user in the city who knows and takes full advantage of the conveniences offered by a freezer is just as enthusiastic as the small town user. The freezer must be used, however, on a daily basis and not just as a place to hoard foods.

In the retail selling of home freezers, therefore, it is vital that we make a classification of the two types of prospects we are selling. Number 1—the food producer, and number 2—the non-producer. Experiences show that the food producer, to a much greater degree, realizes the advantages and economies offered by a freezer.

The food producer will wish to talk to you about freezing garden surplus and how it can be handled. He will want to talk about buying meats or selling his own to the locker plant and having them processed. You must know the various grades of meat. You must know the proper variety of fruits and vegetables which can best be frozen to render efficient information service to your prospects.

Selling a home freezer to a food producer will be comparatively easier to handle than selling one to a city family. When dealing with a non-producer prospect, or the large city resident, it will be necessary to take the initiative in your sales presentation.

### 'Romance' Its Functions

You should explain that a home freezer offers something new in the way of convenience, utility, and economy. You should point out some of the daily uses a freezer offers to these people. It will be necessary to "romance" these uses to some degree because it is extremely difficult for a housewife who has never before used an appliance such as you are talking about, to picture in her mind how this will affect her daily life.

You cannot depend upon advertising or sales promotion material entirely to take the place of the spoken word. To do the most effective job, you should be in a position to recite many of the varied uses that your present home freezer owners are employing to sell home freezers successfully to the large city prospect.

It will be necessary to cultivate a group of enthusiastic users by calling back on them frequently. You should make sure they remain enthusiastic about their home freezers in their conversations with friends and neighbors.

## Knowing How To Use Freezer Helps Sell It



Deepfreeze Division of Motor Products Corp. is carrying out the idea of teaching home freezer operation to those who are going to merchandise it. Miss Geraldine Corman, home economics director of the company, is shown with her "students," all district sales managers.

### Practical Ideas for Use

To give you some idea of what can be done individually and collectively with a home freezer—something that you can talk about to prospects—something you can tie in to their every day life experiences—I would like to point out a few of the uses which we have found to be particularly advantageous and also some of the uses of friends and others who use home freezers to best advantage.

First of all we work on the premise that a home freezer is not a place to hoard foods. It has a place in the daily lives of our families and should be used on that kind of basis. For example—not long ago our family consumed the last portion of our Christmas turkey.

When our turkey arrived at Christmas, we found it was quite a large one, yet after eating on it for two days, we sliced off the balance of the white meat and wrapped the pieces in four different packages for use later in the year. On one occasion, we had turkey and dressing, since we had also packaged the dressing and gravy at the same time. On another occasion, we had cold turkey sandwiches and just recently creamed turkey.

It was particularly advantageous because on each occasion there was little time to plan a meal for that evening. We had turkey in its finest form, all ready for quick meals. In addition to this great convenience, there is an economy angle because the chances are that part of this turkey would have been thrown away in January if we had tried to consume it during the period of a week or two following Christmas. And incidentally, that turkey was delicious every time I had it.

### Corn on Cob In April

On another occasion, we had some corn on the cob. Needless to say, this is a treat in April, but that corn on the cob was purchased last September for only a few cents a dozen. The important point here is that local fruits and vegetables, when they are in season, provide the home freezer owner with the choicest. Since they are at a peak of production, the supply is most plentiful and prices naturally are at their lowest.

Now it isn't necessary to be a farmer or to go to the country to get bargains since this corn was purchased right at our local grocer. Even though it was perhaps several hours or more from the field, it froze perfectly and maintained all its delicious taste, color, and texture.

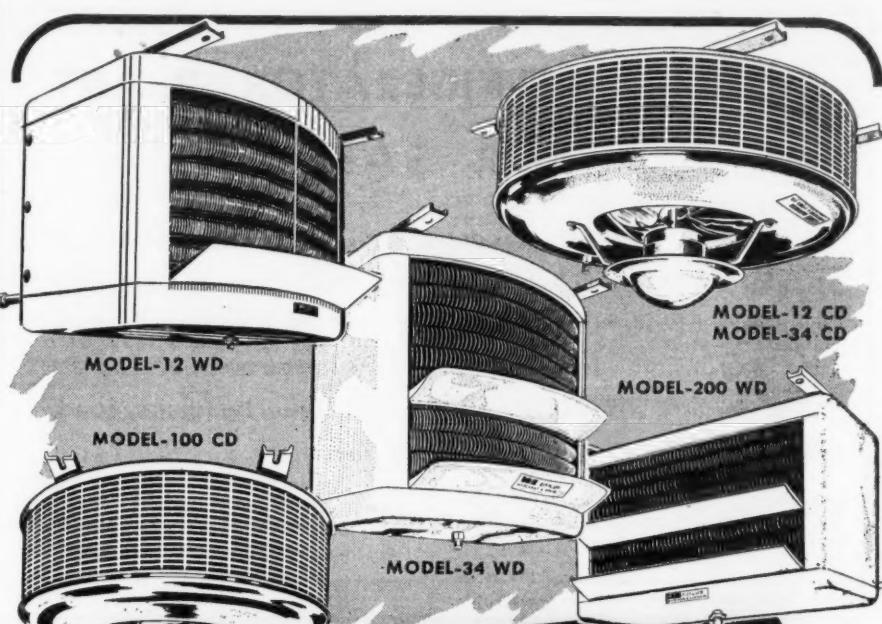
If I may again use personal experience, I would like to give you some idea of what a housewife can do in the way of baking. As you probably know, when an angel food cake is baked, it takes 12 egg whites. Without a freezer, the remaining egg yolks must be disposed of in some fashion. Usually they are cluttering up the refrigerator, or the poor husband is liable to get them mixed up with scrambled eggs for a week or two.

But with a freezer, new experience in baking can be reflected in the following manner. Instead of the egg yolks being used as a leftover, they can immediately be put to use by making a yellow cake, baking both the angel food and the yellow cake at the same time while the oven is still warm and then putting one of the cakes in the freezer to use at a later date.

To capitalize on the advantage of a freezer in these homes, many of

these people prepare such dishes in quantities in advance. Spaghetti sauce, for example, takes a long time in cooking, while the spaghetti itself takes only a few minutes, but the real treat in spaghetti is the sauce. So people who like this dish find it quite an advantage to cook up perhaps five or six meal portions of spaghetti sauce and place it in the freezer for a good spaghetti dinner at any time.

Not long ago we compiled from a survey a total of 91 different home freezer uses. Everyone who has seen this list had his eyes opened when confronted with all the advantages a home freezer offers.



## WALL and CEILING DIFFUSERS

For All Above-Freezing Applications

Manufactured and Distributed by MERCHANT & EVANS CO., Phila. 46, Pa.

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U. S. PRODUCTS EDITION

## Refrigeration and Air Conditioning Directory

BUSINESS NEWS PUBLISHING CO., 450 W. FORT ST., DETROIT 26, MICH.

## Refrigeration Problems And Their Solution By P. B. Reed For Service and Installation Engineers



Manager, Refrigeration and Air Conditioning Division, Perfex Corp.

### The Refrigerated Railway Car (5)

So far, the only application of mechanical refrigeration to railway cars has been on an experimental basis, and confined to a few special cars that are carefully routed, re-coded and studied.

An exception to this statement can be made if we include the brine-tank type as a mechanical system. It consists of vertical brine-tanks placed in each end of the car instead of the ice bunker.

At the loading platforms, cold brine from a brine cooler, usually in a cold storage plant, is pumped through these tanks, thus pre-cooling the car. Forced air circulation is obtained by driving the fan with a portable electric motor.

After pre-cooling in this manner,

the tanks are filled with ice and salt or ice only and re-iced during the trip as required. Enroute the fans are driven by the car wheels.

This system permits fairly rapid pre-cooling without body-icing, and maintains a constant amount of cold surface of the tank, in contrast to the reduced area of the ice in a bunker as it melts. Consequently, more nearly constant temperatures are maintained. This system is used to a considerable extent by shippers who own their own refrigerator cars, especially meat packers.

#### THE SPLIT-AMMONIA SYSTEM

Another semi-mechanical system known as the split-ammonia system, consists of a portion of an ammonia absorption system. Only the evaporation and absorption phases of the system are carried on the car; the generation, rectification and condensation phase are done elsewhere. In this manner the bulk and weight are kept to a minimum, and no heat-

producing apparatus is required on the car, for operating the system.

A bare pipe or finned evaporator coil is hung from the car roof. Receiver tanks, containing 1900 pounds of liquid anhydrous ammonia, are built into the end of the car. From them the liquid ammonia is fed into the evaporator coils through a special type of thermostatic expansion valve.

The low pressure vapor from the evaporator passes out to tanks of distilled water suspended under the car floor, and is absorbed into the water. Refrigeration continues as long as there is any liquid ammonia left in the receivers; ordinarily this is enough to last for three to four days.

At the end of the trip, or sooner if necessary, the receiver tanks are refilled with liquid anhydrous ammonia, and the absorption tanks are drained of the ammonia water (or aqua ammonia as it is also called) and refilled with distilled water, ready to continue with refrigeration.

The plan is to provide a number of stations around over the United States where the ammonia water can be separated into anhydrous liquid ammonia and distilled water to use over again. Like all methods of providing mechanical refrigeration for railway refrigerator cars, so far proposed, the split-ammonia system has both advantages and disadvantages. Some of the advantages are:

1. Low enough temperatures even for frozen foods may be obtained.
2. Adequate refrigerating capacity.
3. Satisfactory temperature control.
4. No motive power required.
5. No moving parts.
6. Simple to operate, adjust, and repair.

#### COMPRESSION SYSTEMS

A few refrigerator cars have been experimentally equipped with several types and designs of compression systems, but not in large enough numbers on which to base definite conclusions. Perhaps a better guide to future possibilities and design trends for the mechanically refrigerated car lies in a study of the methods that have been and are now being used to provide refrigeration for cooling and air conditioning purposes.

(Concluded on next page)

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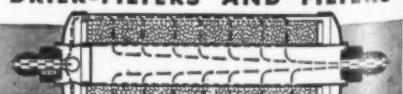
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Ask Your Wholesaler  
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## The Refrigerated Railway Car--

(Concluded from preceding page)  
senger cars. Thousands of coaches, diners and sleeping cars have been equipped with a refrigerating system as a part of the air conditioning equipment.

Not all, but many of the problems are the same for producing refrigeration for human comfort as for food preservation; so a study of the types of refrigeration equipment used in air conditioning should shed some light on the trends in design that have proved practical in that field and which may be translated to the refrigerator car problem.

### WHERE WILL THE POWER COME FROM?

For the compression system one of, if not the most difficult problem is to provide motive power for operating the compressor and perhaps also a fan for the evaporator. If the railroads were all electrified, this problem would fade into a minor one. But there are only a few thousand scattered miles of roads that are electrified.

The power must be there anytime it is needed, whether the refrigerator car is a part of a train or standing on a siding by itself; whether it is moving or standing still; whether it is in the north or south, east or west; and whether it is on one railroad or another.

Ideally the temperatures should be kept constant and well controlled, and it should be possible to keep the same car, at one time at 0° for frozen foods, or at another time at 35 to 40° for fresh fruits or vegetables, whether the outside temperatures are 40° or 125°.

Provision must also be made for heating a refrigerator car when passing through northern areas in the wintertime with outside temperatures below freezing, to protect fruits or vegetables against damage from freezing.

### CAR AXLE DRIVE

Some attempts have been made to drive the compressor from the car axles or wheels. The obvious fault with this method is that there is no refrigeration when the car is not in motion, such as during temporary stops, in the yards or on sidings, or even during loading and unloading.

If these periods extend beyond a few minutes, wide temperature fluctuations occur, and for extended periods, when the car is not in motion, the perishables may be damaged. Even when the car is in motion, accurate temperature control is well-nigh impossible due to the variation in the car speed and consequent refrigerating capacity of the compressor.

Eutectic plates could provide reserve or storage of refrigeration, but accurate temperature control would still be difficult. Also the added weight would be objectionable.

### REDUCTION OF POWER OF THE LOCOMOTIVE

Moreover, the power taken from the car axles acts as a brake on the locomotive, so much so that a number of refrigerator cars powered from the axles would use so much of the power from the locomotive as to seriously affect its ability to draw the train and would reduce the amount of "pay load."

To make axle-produced power available when the train is not in motion, a system employing an axle-driven generator, storage batteries and an electric motor driven compressor has been suggested. Such a system would be rather expensive as to first cost and cost of maintenance and repair, and would still impose the objectionable load on the locomotive.

Additional objections would be weight and bulk and the limitation of the capacity of the batteries upon the time that refrigeration could be supplied during the periods that the car was not moving.

### THE POWER CAR

A method that has been used with considerable success in railway air conditioning, is for the locomotive to have an auxiliary generator of enough capacity to provide electricity for all purposes for the entire train. This provides enough electricity at all times for lighting, cooking, ventilating fans, heating and for the motors driving the refrigerating compressors, whether or not the main engine of the locomotive is in operation, or the train is in motion. Also it eliminates the "drag" on the locomotive main engines.

It does not, however, provide for power for the individual car separated from its train and set off on a remote siding. Such a car could be temporarily operated by being "plugged" into a local source of electric current.

### LONG FREIGHT TRAINS IMPOSE PROBLEMS

Power car systems are successfully applied to passenger trains or mail or express trains, consisting of fifteen to twenty cars, all of which may require electric current for some purpose. A freight train may consist of several times that many cars, only a few of which (the refrigerator cars) have need for electricity.

The refrigerator cars may be scattered throughout a string of a hundred or more freight cars and the electric current would have to be led through the entire train.

On the other hand, on the siding, or in the yards, the car could be plugged into a source of current to operate the refrigerating equipment. Such a system could be made rather simple, light and of little bulk. Also it could be rather easily installed and serviced, and accessible for maintenance. The diesel and diesel-electric locomotives are gaining in popularity and may provide the

basis on which mechanical refrigeration may be applied to non-passenger trains.

### INDIVIDUAL ENGINE DRIVE

Some railway air conditioning systems employ an internal combustion engine on each car to drive the refrigerating compressor. This makes the refrigerating system a complete self-powered unit, independent of other sources of power, and thus fully operative at all times and whether the car is in motion or not, whether it is on the siding or connected to its train and where it is placed in the train.

The unit includes a small storage battery kept charged by a small generator in much the same manner as on an automobile. This provides power for cranking the engine and thus allows fully automatic operation, with temperature control.

To keep the engine warm for easy starting during cold weather, and during extended idle periods, a timer arbitrarily starts and runs the engine for a few minutes out of each half-hour.

### PROPANE ENGINE USED

The engine could be a diesel, in which case continuous operation would probably be advisable. Or the fuel could be gasoline, although many of the systems of this type use one of the liquified petroleum gases for fuel, such as propane, butane, etc. One widely used system uses a propane engine.

Several "streamliners" are equipped with these individual systems, one to each car. To provide electricity for ventilating fans and other purposes, each car is also equipped with another propane engine driving an

electric generator. Both the refrigerating and the generator units are the "roll-out" type, with flexible lines and are located underneath the car for easy accessibility.

### APPLICATION TO REFRIGERATOR CARS

Experimentally, but on actual test cars in use, the engine-driven unit for refrigerator cars has been built in two types:

One, similar to the above, is mounted underneath the car. It is the roll-out type and consists of the condensing unit only. It is connected to the evaporator up in the car, of whatever type is most suitable to the particular application. A suitable valving arrangement allows the condensing unit to be replaced as a unit if necessary.

Another type is completely self-contained and consists of the condensing unit, engine-driven, and a blower-coil type evaporator all mounted on the same frame and assembled together, and slid into a space provided in one end of the car in place of one of the end bunkers.

If necessary this complete unit can be replaced in its entirety by relatively unskilled personnel. Stocks of spare units could be maintained at various centralized points to insure continuity of service and maintenance of proper refrigeration temperatures.

### INCREASED SERVICE PERSONNEL

Organization of Service Departments at an increased number of points, including smaller centers of population, will be necessary if and when mechanically refrigerated railway cars come into widespread use. This in turn will call for additional

trained men and more service work.

The use of mechanically refrigerated railway cars is not in its infancy; it has not even been born yet. Whether or not this vast market is "cracked" depends upon the ability of the refrigeration industry to understand the problems of the railroads, both mechanical and economic; and to supply the equipment so designed as to meet the needs that are, in many respects, peculiar to the railroads and so different from our ordinary stationary applications.

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are available not only for the smaller size compressors normally used for household refrigerators, but also for...

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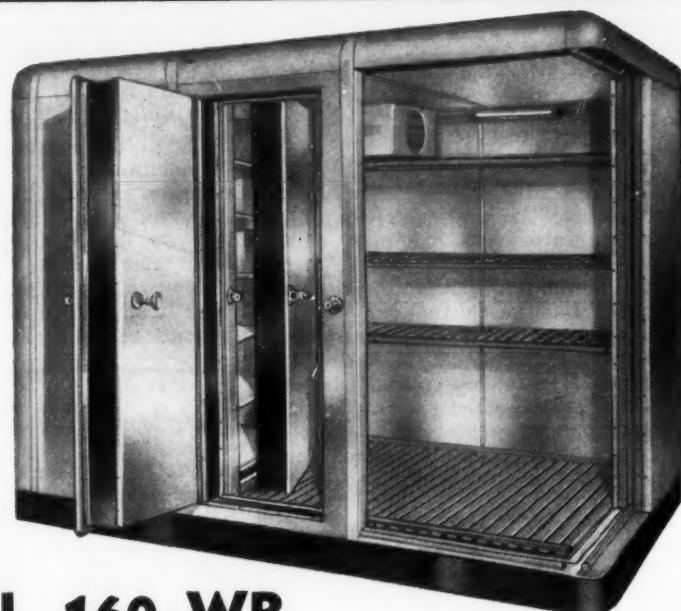
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Here is America's finest two-temperature food freezer—a "walk-in" Model with rustproof Aluminum Construction inside and outside. Has 160 cubic-foot capacity—freezing chamber 60 cubic feet at zero—100 cubic-foot refrigerated space at 38° (adjustable). An ideal unit for commercial, institutional and home use.

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Main 2-9093



Haylo gas heater

### Fine Products Co. Kit Contains 18 Dehydrators

CHICAGO—The "Rapid" dehydrator kit, partitioned to contain 18 dehydrators ranging in size from 5 cu. in. to 50 cu. in., has been introduced here by the Fine Products Co.

Designed for use by servicemen as a place to store dehydrators in their service trucks, the kit is made of 20 gauge metal and measures 8½ in. sq. by 18 in. high.

It has a hinged lid and hinged side for ready access to the dehydrators, according to the Fine company. Two sliding drawers are provided for replacement adapters and gaskets. The unit has flat folding handles.

The Fine Products Co. has declared that the kits will be made available through refrigeration wholesalers. They will only be supplied complete with refillable dehydrators.



'Rapid' Dehydrator Kit

## What's New

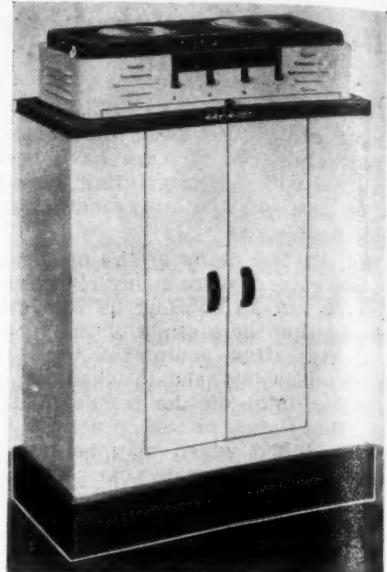
### McCulloch Motors Turns Out New Gas Space Heater

LOS ANGELES—Haylo gas heaters built of high-pressure, aluminum-alloy die castings and designed for homes and apartments are now available in production quantities, according to the Heater Division of McCulloch Motors Corp. here.

Capacity of the unvented heater is given as 6,000 B.t.u. It is said to be approved by the American Gas Association for use with natural, manufactured, or L-P gas.

Dimensions are 11½ in. high by 6 in. wide by 12 in. long. Weight is reported as 4½ pounds, complete with valve.

The unit is described as "rustproof and dentproof." Heating by convection is obtained through the louvered frame.



\* \* \*

### 'Ray-N-Jet' Is Combined Hot Plate and Cabinet

BROOKLYN—A small combination two burner hot plate and storage cabinet, named the "Ray-N-Jet," has been introduced by Lamarc Electric Appliances here.

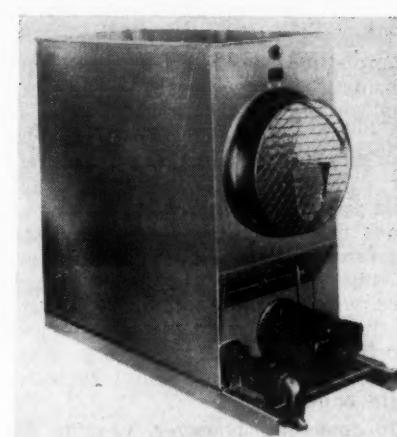
Designed for use in small apartments or as an auxiliary cooker in factory kitchens, the Ray-N-Jet measures 22 in. long, 10 in. wide, and 36 in. high.

The hotplate is constructed on heavy gauge steel and has a baked white enamel finish with black wrinkle trim, the company said.

Each burner has three heats, 200, 600, and 800 watts. The unit can be easily dismantled for adjustment of the hot plate, according to the company. It is equipped with a removable drip pan inserted beneath the hot plate.

The cabinet features doors that slide sideways rather than open outward and a removable shelf.

The manufacturer has priced the Ray-N-Jet at \$29.95.



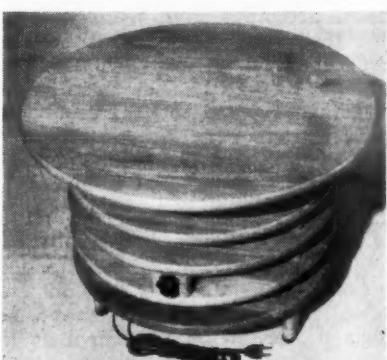
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### Marley Co., Inc. Designs Easily Serviced 'Aquatower'

KANSAS CITY—"Aquatower," a compact "packaged" cooling tower, said to be suitable for use with either indoor or outdoor installations ranging from 3 to 15 tons, has been developed by Marley Co., Inc. here.

Servicing of this unit, which is available with or without pumps, is said to be made easy, because all component parts are readily accessible to the serviceman. As the tower is designed with all standard components, no special pumps or motors need be returned to the factory for servicing.

A heavy fan guard assures safe operation of the Aquatower.



\* \* \*

### Portable Air Circulator Resembles Coffee Table

LOUISVILLE, Ky.—Two new models of portable circulators, which look like coffee tables, have been introduced recently by the E. N. Mimms Co. here.

According to the manufacturer, draft-free low-level air is scientifically circulated to all portions of the office or home room by either of these models.

"The Lowboy" is a square model with a shipping weight of approximately 21 pounds, which retails for \$51.98, including Federal tax. "The Northington," which retails for \$83.58, including tax, is a round table model, which is said to ship at about 40 pounds.

Mechanical features of the circulators are: a totally enclosed motor, patented aluminum blades, three-speed switch, and a cone deflector.

Both models, according to the manufacturer, are available in mahogany, walnut, or blond finish.

## ENGINEERING SALES MANAGER

We require a sales manager who is thoroughly conversant with the sale of mechanical engineering products to owners of refrigerated food storages and coolers.

The success of the DOREX line of activated carbon air purification equipment in helping to preserve food, prevent flavor transference, extend storage life and maintain quality, indicates a broad market in this expanding industry. If you are about 40, with a record of achievement in this field, we believe this position offers an excellent opportunity.

Write, giving education and business experience. All replies will be held in confidence. No phone or personal calls.

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REFRIGERATION PLATE**

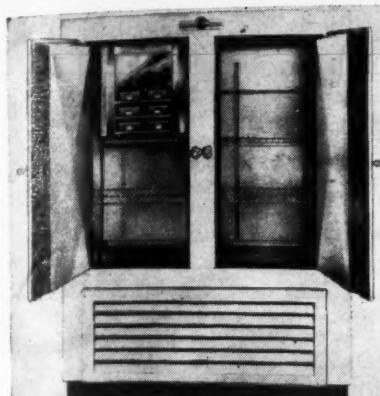
In thousands of freezer cabinets, frozen food locker plants, sharp freeze shelf stacks and similar equipment all over the country Hubbell-Yoder Refrigeration Plates are doing the job better than it has ever been done before, and at a lower cost. They have established a new and vastly higher standard of operating efficiency and economy for low temperature refrigeration. They have set up a new mark for all other freezing units to shoot at. That briefly, is what the Hubbell-Yoder system of Complete Surface Freezing means when the chips are down. Would you like to know how it can be adapted to your requirements? Write, wire or phone.



**ENGINEERING SERVICE, INC.**  
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## What's New (Cont.)

### Victory Corp. Introduces New Commercial Models

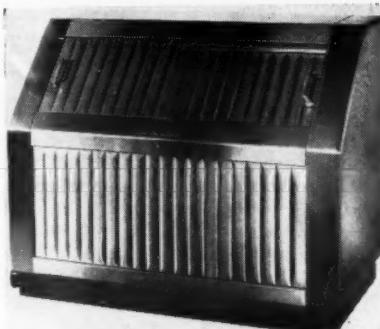


20-cu. ft. self-contained reach-in

\* \* \*

PHILADELPHIA — First of the new line of commercial refrigerators with Dulux exteriors and stainless steel interiors is now being shipped to the trade by Victory Metal Mfg. Corp. here.

Among the new models (the one illustrated in the above photograph) is a 20-cu. ft. self-contained model. It is fitted with an ice-cube making evaporator, and comes with a  $\frac{1}{3}$ -hp. condensing unit.



Stainless steel bottle beverage cooler

\* \* \*

Victory is also expanding its all stainless steel line of refrigerators and fixtures, one of the features of this line being the bottle beverage cooler, which is constructed with no outside corners. The front is conveniently pitched so that bottles at the bottom can be easily reached.

### Air Flight Circulator Has 'Tear-Drop' Louvres

CINCINNATI — Designed to draw cool air from the floor and circulate it in all directions throughout a room, a new plastic "Air Flight" circulator



Cost of installation is said to be slight for few if any changes are required as the Drain-O-Matic waste eliminator fits all types of sinks which have drain openings of from 3 to 4 in.

### Comfort Products Makes Four-Way Washer Cooler

DALLAS, Tex.—A four way air washer-cooler, which is said to change, filter, wash, and cool air at a rate of 5,000 to 10,000 cu. ft. per minute and with an efficiency up to 96% of wet-bulb standards, is now being produced by the Comfort Products Corp. here.

The "Comfort Air Washer," as the unit is called, cools by evaporation and can be used wherever heat exists without excessively high humidity, according to Jack Spitzka, president of the firm.

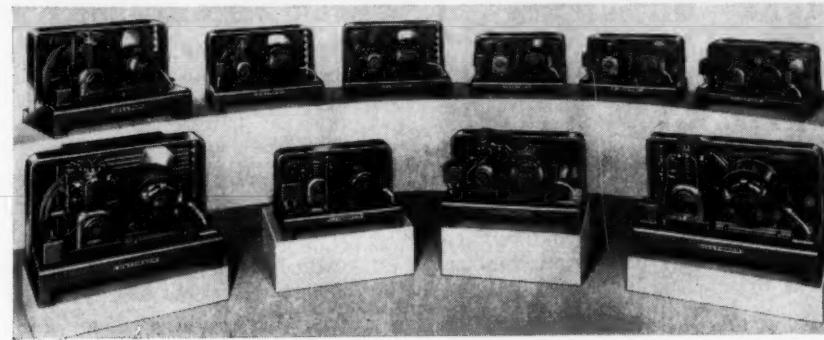
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CHICAGO 16, ILL. NEW YORK 13, N.Y.

### Hussmann's Latest-Design Condensing Unit Line Presents Wide Variety of Sizes and Features



Line-up of Hussmann condensing units

\* \* \*

ST. LOUIS — Introduction of its latest-design condensing units in both water-cooled and air-cooled types and in sizes from  $\frac{1}{4}$  to 2 hp. is announced by Hussmann Refrigeration, Inc.

Hussmann lists the following features of the units:

All motors are protected against overload damage by automatic overload devices.

Entire bases are die-formed from extra-heavy-gauge steel on draw presses.

All parts are electrically arc-welded into one integral unit "producing a base which is heavy, strong, and resistant to vibration and noise."

Belt guards, and on the larger size units a belt tightener which permits one workman to take up tension.

Low pressure controls on all air-cooled units up to and including 1 hp., and dual pressure controls on larger air-cooled and all water-cooled units are listed by the company.

### Halstead & Mitchell Produces 2-Stage Condenser

PITTSBURGH—Production, in certain sizes, of a new two-stage double-tube counterflow refrigeration condenser has been announced by Halstead & Mitchell here.

These new two-stage condensers incorporate the same cleanable feature characteristic of the line.

Through the adaptation of the two-stage principle, a greater concentration of water tube copper surface is achieved, and improved velocity characteristics in the refrigerant passages are realized by increasing water tube size in the lower portion of the unit, the Halstead & Mitchell Corp. claims.

Prevent Freezups...  
Clogging..Corrosion!

**DFN**

### DEHYDRATORS

- Cartridge type
- Angle type
- Non-refillable type
- For hermetic systems

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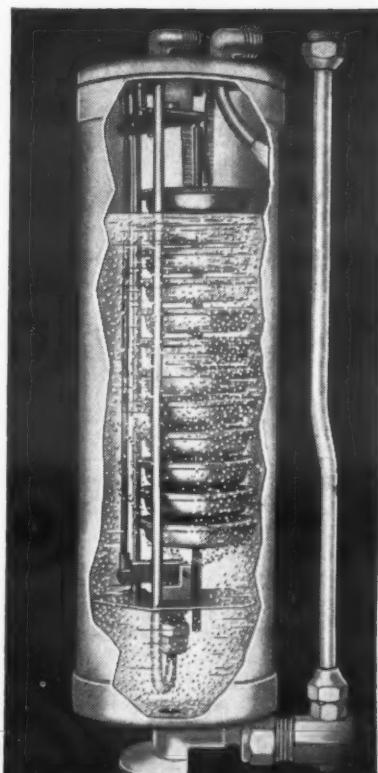
**M A R S H**

### Pressure Gauges Dial Thermometers

★The gauge with the  
Recalibrator

Ask for this New  
Refrigeration Booklet

JAS. P. MARSH CORP.  
2061 Southport Ave., Chicago 14, Ill.



Another Quality Product  
from the House of Hudson

### HOW IT WORKS

The twin cylinders of the Hudson Constant Pressure Carbonator alternate in operation to deliver 25 gallons or more per hour flow of sparkling, carbonated water at constant pressure up to 125 pounds at the draft arm, regardless of city water pressure.

### INSTALLATION

The Hudson Constant Pressure Carbonator is small and compact ( $3\frac{3}{4}'' \times 16\frac{1}{4}'' \times 9\frac{3}{4}''$ ), weighs only 17 pounds and may be installed in any sweet water bath or other cooling system. Expense of service and replacement of parts are eliminated with the Hudson Constant Pressure Carbonator.



**HUDSON PRODUCTS CO. Inc.**

4400 ST. AUBIN AVE. Dept. A  
DETROIT 7, MICH.

# Servicing Truck Refrigeration Units

## Instalment No. 39

### Complaint

3. Poor Refrigeration. Condensing units operates continuously.

### Causes (Cont.)

F. Too many plates on one expansion valve. It is possible that too many plates may be operating in series off a single expansion valve. Table 4, using Kold-Hold part numbers, shows the recommended number of plates to be fed by various valves.



### Tops in PERFORMANCE ECONOMY and EFFICIENCY

**Lynch** Manufacturing Corporation  
General Offices, Toledo 2 • Factory, Del Norte, Ohio, U.S.A.



The label that is your guarantee of maximum performance and satisfaction. Your jobber stocks it—for refilling and in factory charged dryers.

G. Not enough plates in truck. Due perhaps to a miscalculation in figuring the job, but more likely to a change in the type of merchandise carried by the truck, it may happen that the system is not refrigerating properly because there is not sufficient hold-over capacity.

This condition might require the installation of larger or additional eutectic plates in the truck. Eutectic plate requirements for a refrigerated truck may be figured in the following manner (this method was developed by Kold-Hold for systems employing its plates):

In this sample computation the truck has inside dimensions of 7 ft. high x 7 ft. wide x 14 ft. Desired temperature is 45°. There is a heavy service load. The truck will be 10 hours on the road, and there will be 12 hours for charging. Insulation consists of 3 in. of glass wool.

1. Determine outside dimensions in inches by adding wall thickness:

Length	Width	Height
168	84	84
6	6	6

174      90      90

2. Determine total exposed surface in sq. ft.:

Side Walls	
174 x 90 x 2	= 218
144	

End Walls	
90 x 90 x 2	= 113
144	

Roof & Floor	
174 x 90 x 2	= 218
144	

Total	
549	

3. Compute 24-hour load, using the k (heat transmission) factor of 2.62 for 3 in. of glass wool, as shown else-

where in Table 5: Exposed surface x k factor x temperature difference between outside air and desired inside temperature.

$$549 \times 2.62 \times (95 - 45) = 72,000 \text{ B.t.u.}$$

4. Determine hourly load:

$$72,000 \text{ --- } 24 = 3,000 \text{ B.t.u.}$$

5. Determine load during 10-hour service period:

$$3,000 \times 10 = 30,000 \text{ B.t.u.}$$

6. Add service opening factor (50% for heavy service, 25% for light service):

$$30,000 \times 50\% = 15,000 \text{ B.t.u.}$$

7. Total of items 5 and 6 determines hold-over required:

$$30,000 + 15,000 = 45,000 \text{ B.t.u.}$$

8. Divide by number of hours on road to arrive at hourly load during service period:

$$45,000 \text{ --- } 10 = 4,500 \text{ B.t.u.}$$

9. Determine "K" value (Table 6 shows the "K" value as used for Kold-Hold plates) required by dividing the temperature difference between the body temperature and eutectic freezing point. Use -8° F. freezing point for low temperature; 18° F. freezing point for next higher temperature:

$$4,500 \text{ --- } 167 \text{ "K"}$$

10. Select plates from Table 6. Total hold-over and "K" value must equal or exceed items 7 and 9. Use three plates model F804.

11. Determine condensing unit capacity required. Item 3 plus item 6 divided by number of hours available for charging:

$$72,000 + 15,000 = 7,250$$

12

Therefore, a condensing unit would be required which could produce 7,250 B.t.u. per hour at 8° F. suction temperature.

Table 4—Number of Truck Plates per Valve

Plate Model No.	LOW TEMPERATURE				Ammonia
	Methyl Chloride	"Freon-12"	5110	5112	
Prefix "D"	4110	4112	5110	5112	4610 *4612
701 & 801	2	6	2	6	6 6
702 & 802	2	5	1	5	6 6
703 & 803	1	4	1	4	6 6
704 & 804	1	4	1	4	6 6
705 & 805	1	3	1	3	5 5
706 & 806	1	4	1	4	6 6
707 & 807	1	4	1	4	6 6

### MEDIUM & HIGH TEMPERATURE

Prefix "F" or "K"	MEDIUM & HIGH TEMPERATURE				4611	4613
	4111	4113	5111	5113		
701 & 801	2	6	2	6	6	6
702 & 802	2	5	2	5	6	6
703 & 803	1	4	1	4	6	6
704 & 804	1	4	1	4	6	6
705 & 805	1	3	1	3	5	5
706 & 806	1	4	1	4	6	6
707 & 807	1	4	1	4	6	6

\*No. 4612 is fitted with a specially-charged power element for installation in low-temperature compartment and not on plant lines as is customary for ammonia system. Do not use this valve in external or exposed locations. Models No. 4610 or 4611 are for applications on plant lines.

Table 5—Heat Transmission of Common Insulants

Insulant	k*	Thickness of Insulation				
		2½"	3"	4"	5"	6"
Balsam Wool	.27	3.05	2.52	1.86	1.37	1.18
Balsa Wood	.38	4.29	3.55	2.62	1.92	1.67
Celotex	.33	3.73	3.09	2.27	1.67	1.45
Cork (Floors)	.29	3.26	2.71	2.00	1.56	1.27
Cork (Walls)	.27	3.05	2.52	1.86	1.37	1.18
Dry Zero	.24	2.71	2.24	1.65	1.21	1.05
Glass Wool	.28	3.16	2.62	1.93	1.42	1.23
Hairfelt	.27	3.05	2.52	1.86	1.37	1.18
Insulite	.34	3.84	3.18	2.34	1.72	1.49
Oak Wood	1.02	11.5	9.55	7.04	5.17	4.49
Rock Cork	.29	3.28	2.71	2.00	1.56	1.27
per 24 hrs.						
1 pane glass	1.13	27.12		3 panes glass	.29	6.96
2 panes glass	.46	11.04		4 panes glass	.21	5.04

Deduct glass area from total area when figuring insulation heat leakage above—then add at this factor

\*Per sq. ft./°F./24 hrs.

Table 6—Capacity of Truck Plates

Part No. (Kold-Hold)	"K" Factor	Freezing Temperature -8° F.		Freezing Temperature 18° F.		
		B.t.u.	Capacity	Part No. (Kold-Hold)	"K" Factor	B.t.u.
D801	38	9,850		F801	38	9,100
D802	45	11,100		F802	45	10,500
D803	56	13,650		F803	56	12,900
D804	64	17,450		F804	64	16,250
D805	76	19,800		F805	76	18,300
D806	58	15,450		F806	58	14,350
D807	51	13,400		F807	51	12,400

"One Shot and  
Sure Shot"  
... SAYS MR. SPEAR



HARRY H. SPEAR  
REFRIGERATION SERVICE ENGINEER

November 28, 1946

Highside Chemicals Company  
195 Verona Avenue  
Newark 4, New Jersey

Attention: Mr. L. V. Gardner

Dear Mr. Gardner:

I started using Thawzone exclusively six years ago and since then have never used a dryer (except on SO<sub>2</sub>) in any service or installation work. I always install a new strainer, put in Thawzone, and then go away and forget it. Thawzone is a one-shot and sure-shot position with us. When you service and install 75 miles from the shop, you must have something that is positive in action.

Some time ago I installed an FL2 locker plant (20 H.P.) and used some old 1-1/4" iron pipe coils. These were cleaned and washed in carbon tet, and then, to be on the safe side, I put two quarts of Thawzone into the 500# of Freon. This job has given us no trouble at all from freeze-ups. We also added 1-1/2 quarts of TRACE at the same time.

**Farr Addressing Joint West Coast Meeting**

NARC President Warren W. Farr (center) speaks at joint meeting of Los Angeles and San Diego groups. Others in picture (l. to r.) are: N. S. Templin, executive secretary, Los Angeles Refrigeration Contractors Assn.; R. W. Noll, president of the Los Angeles group; T. H. Chamberlin, former president of the Los Angeles Contractors Assn.; R. L. Parker, president of the San Diego group; and Z. E. Jones, secretary-manager of the San Francisco Contractors Assn.

\* \* \*

**Equipment Tests --**

(Concluded from Page 1, Column 3)

The main portion of Mr. Farr's talk dealt with objectives and accomplishments of national and local contractor associations. Commenting on the latter, he said he had been impressed by the efforts and achievements of various groups visited during trips around the nation.

The importance of obtaining qualified members, the value of good public relations and publicity, and the valuable assistance to be rendered safety, fire, and health departments were stressed as important factors in the development and operation of a local group.

Both the national and the local associations do and should work with other segments of the industry, particularly manufacturers and wholesalers, to solve common problems, Mr. Farr noted. This, he said, is not only good business but pays tangible dividends to all concerned.

He also outlined the advantages of joint efforts on labor relations, and briefly reviewed the negotiations which have been in progress for some time between NARC and the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry.

Mr. Farr was introduced to the large gathering by R. W. Noll, president of the Los Angeles association. He was welcomed by Robert Parker, president of the San Diego group, and W. W. Allison, international president of the Refrigeration Service Engineers Society.

Guests included R. H. Beck, a former director of the Los Angeles association and former Pacific regional manager for York Corp., who has retired; T. H. Chamberlin, another former president of the Los Angeles group who now operates a refrigeration wholesale business; and Z. E. Jones, secretary-manager of the Refrigeration Contractors Association of Northern California.

**Waterbury Named Manager  
Of G-E's Cleveland Works**

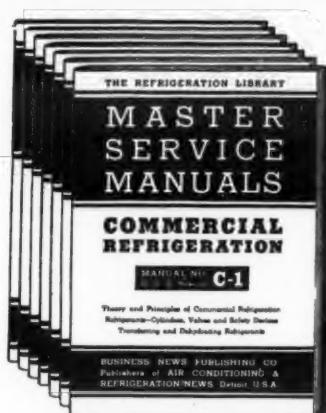
CLEVELAND — R. W. Waterbury has been appointed manager of the Cleveland works of the General Electric Co.'s Appliance & Merchandise Department. He is in charge of manufacturing and engineering.

Upon the purchase of the Electric Vacuum Cleaner Co. by the General Electric Company in 1945, Waterbury was appointed accountant of G-E's new electric vacuum cleaner division.

**COMMERCIAL REFRIGERATION**

**Thousands of  
refrigeration men  
have ordered these  
useful books.**

See them at your nearest  
parts wholesaler

**COMMERCIAL REFRIGERATION**

by K. M. Newcurn

**MANUAL NO. C-1**—The theory and principles of refrigeration presented in a more complete manner than in household manuals. Properties of refrigerants, including effect on lubricating oils. Types of refrigerant cylinders, valves, and safety devices. Methods of drying and transferring refrigerants. 96 pages. 59 illustrations. 10 tables. Price \$1.00.

**MANUAL NO. C-2**—Installation and service methods. Detailed information on commercial condensing units and their component parts. Water regulating valves, both electric and pressure-actuated types. Flooded evaporators and low side float valves. Two-temperature flooded systems. 112 pages. 108 illustrations. Price \$1.00.

**MANUAL NO. C-3**—Installation and service methods continued. Chapters on expansion evaporators, including blower units and all modern types. Thermostatic and temperature controls. Refrigerant control valves. Electric motors, starters, overload relays. 144 pages. 116 illustrations. 7 tables. Price \$1.00.

**Business News Publishing Co.**  
450 W. Fort Street Detroit 26, Michigan

**Detroit School Offers  
New Thermodynamics,  
Air Conditioning Course**

DETROIT—A new course in thermodynamics and advanced air conditioning, to be offered both at day and evening sessions, has been announced by the Detroit Air Conditioning Institute.

Evening classes will start on July 8, while the full time day class will commence on August 18, George H. Clark, director, declared.

The course will cover elementary thermodynamics, heat engines, heating, refrigeration, and air conditioning, he said. It is designed for men engaged in the heating, refrigeration, or air conditioning business or for men with a high school education or better, Mr. Clark stated.

The evening classes will meet from 7 to 10 p.m. on Tuesdays and Thursdays for the next 18 months. The day classes will meet from 9 a.m. to 5:30 p.m., with a half hour off for lunch, for 5 months.

**Techniflex Made Division  
Of The Flexpansion Corp.**

NEW YORK CITY—The Techniflex Corp., manufacturing engineers here specializing in refrigeration products, has been merged with the Flexpansion Corp. here.

It will hereafter operate and be known as Techniflex division of The Flexpansion Corp.

**Blower Salesmen Get Together**

Gathered at Dayton to hear the latest sales strategy are these Lau Blower division salesmen. Front row, left to right: Bill Lohrey, Ernie Wolford, Lee Gillespie, Harold Faulkender, Gordon Kinsman, Ed Lau. Back row, left to right: Orin Sommers, John Burrows, Tom Byrd, Jim Lutzinger, Jim Wallace, and Joe Kilian.

**Lau Blower Co. Salesmen Urged To Seek  
Wide Scale Educational Installations**

DAYTON—A three-day meeting of the blower division salesmen of The Lau Blower Co. was held in Dayton on June 9-11 immediately following the National Warm Air Heating and Air Conditioning Association meeting.

"Panelair" heating was thoroughly discussed with the idea that each salesman talk with his customers

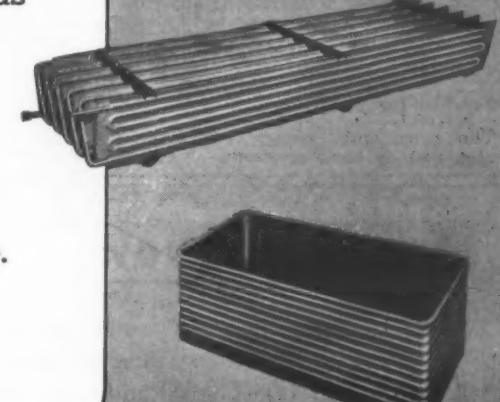
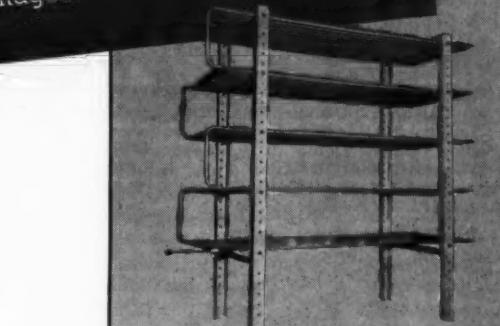
about arranging for an installation in every community of any size, to better acquaint the public with the benefits of this type of system compared with other methods of radiant heating.

Modernized winter air conditioning was discussed and a program for promotion of this idea was outlined.

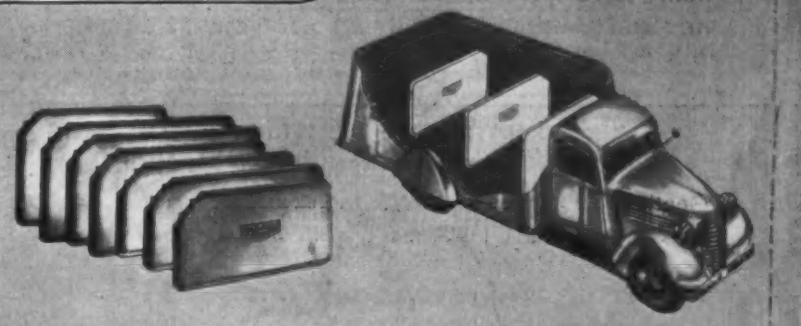
# KOLD-HOLD EVAPORATOR PLATES For ALL Lowside Applications

The New Kold-Hold "Quick-Action" Serpentine Plates offer outstanding economies and efficiency. Specifically, these plates either used separately, in banks, in plate stands, or as complete cabinet liners, assure you the following advantages:

- 1 Easy installation.
- 2 Maximum prime surface.
- 3 Highest rate of plate heat acceptance.
- 4 No possibility of short circuiting the flow of refrigerant which flows in one continuous pass from inlet to outlet.
- 5 Oil logging positively prevented.
- 6 Minimum pressure drop.
- 7 Tested to 300 lbs. per square inch pressure.
- 8 Has an appreciably higher "K" factor.
- 9 Thoroughly cleaned and dehydrated.



For transportation of perishables, Kold-Hold Truck Plates prevent loss from spoilage, preserve truck bodies and eliminate unnecessary time losses from loading and unloading.



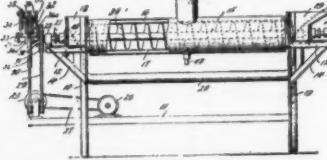
**KOLD-HOLD**  
**KOLD-HOLD MANUFACTURING COMPANY**

500 E. HAZEL STREET, LANSING 4, MICHIGAN

# PATENTS

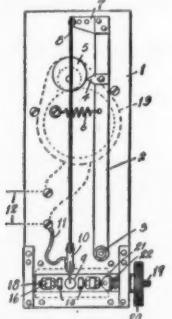
**Week of April 8**  
(Continued)

**2,418,746. FOOD FREEZING MACHINE.** Louis H. Bartlett, Willis E. Woolrich, and Howard E. Brown, Austin, Tex., assignors to Texas Research Corp., Austin, Tex., a corporation of Texas. Application Sept. 27, 1941, Serial No. 412,648. 25 Claims. (Cl. 62—114.)



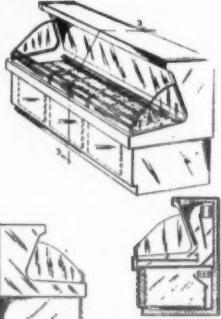
1. In a quick freezing machine of the type employing a heat transfer medium in contact with the articles to be frozen, a member having therein a passageway, means for chilling the surface of the passageway below the initial freezing point of the heat transfer medium, an agitator for freeing the wall of the passageway from adhering frozen particles and for moving the heat transfer medium and the refrigerated articles thru the passageway, and power means for imparting to the agitator an irregular motion, including a constant series of short forward movements alternating with periods of dwell, whereby the particles are advanced in a series of impulses. Re. 18,851. Original Pat. No. 1,833,846.

**2,418,762. THERMOSTAT.** William A. Dehn and Adam E. Armstrong, Three Rivers, Mich., assignors to Armstrong Machine Works, Three Rivers, Mich., a corporation of Michigan. Application Oct. 27, 1943, Serial No. 507,777. 12 Claims. (Cl. 200—139.)



1. In a thermostat, the combination with a base plate, of an arm pivotally mounted on one side of said base plate and provided with a laterally projecting forwardly offset bracket at its swinging end, a bimetallic blade-like thermal element mounted on said bracket in substantially parallel relation to said arm, said thermal element being provided with a contact element at its free end, a cam, a follower on said arm coating with said cam, a spring acting to urge said follower to said cam, a synchronous motor on the opposite side of said base plate having driving connection to said cam, a contact member supporting slide mounted on said base plate for adjustment transversely of said thermal element, threaded adjusting means for said slide, and a pair of contact members mounted on said slide for coaction with said contact on said thermal element.

**146,558. DESIGN FOR A REFRIGERATED DISPLAY CASE.** Russell E. Davis, St. Louis, Mo., assignor to Hussmann-Ligonier Co., St. Louis, Mo., a corporation of Delaware. Application Feb. 7, 1946, Serial No. 126,358. Term of patent 14 years. (Cl. D60—11.)



The ornamental design for a refrigerated display case, as shown.

## AVAILABLE FOR LICENSING OR SALE

The following patents have been offered for licensing on reasonable terms by the Nash-Kelvinator Corp.

This series of patents refers to the construction of compact refrigerating units, principally for domestic use which provide more effective and rapid freezing and uniform cooling. A majority of the patents relate to methods of fabricating an evaporating unit shaped to serve as a storage chamber or ice tray receptacle. This unit comprises a pair of nested metal casings welded at the edges and at various spaced intervals or corrugated to form integral expansion chambers for the circulation of a refrigerant. Other patents show the positioning of the refrigerant tank enabling the liquid level of the refrigerant in the expansion chamber to be adjusted, the provision of heat absorbing fins to increase heat transfer characteristics of the evaporator, and numerous coil arrangements. Automatic operation of the freezing units is, in many cases, effected upon insertion of a warm tray. Detailed information may be procured by addressing Ralph E. Baker, Patent Dept., Nash-Kelvinator Corp., 14250 Plymouth Road, Detroit 32, Mich. Groups 33—71; 35—34. Reg. Nos. 5,288—5,337.

Re. 18,851. Original Pat. No. 1,833,846.

Re. 18,633. Original Pat. No. 1,817,202. Re. 20,388. Original Pat. No. 1,893,338. Re. 20,402. Original Pat. No. 1,918,818. Pat. 1,753,796. Pat. 1,753,802. Pat. 1,753,943. Pat. 1,753,754. Pat. 1,759,513. Pat. 1,763,754. Pat. 1,779,284. Pat. 1,781,193. Pat. 1,785,576. Pat. 1,805,787. Pat. 1,810,569. Pat. 1,823,002. Pat. 1,826,308. Pat. 1,842,995. Pat. 1,878,284. Pat. 1,878,301. Pat. 1,891,728. Pat. 1,893,341. Pat. 1,893,378. Pat. 1,896,412. Pat. 1,927,510. Pat. 1,943,557. Pat. 1,945,103. Pat. 1,951,657. Pat. 1,960,796. Pat. 1,968,048. Pat. 1,982,429. Pat. 1,983,990. Pat. 1,987,707. Pat. 1,996,808. Pat. 2,001,872. Pat. 2,013,515. Pat. 2,013,516. Pat. 2,013,521. Pat. 2,021,924. Pat. 2,079,349. Pat. 2,098,731. Pat. 2,109,199. Pat. 2,115,120. Pat. 2,206,999. Pat. 2,297,633. Pat. 2,325,705. Pat. 2,325,706. Pat. 2,401,793.

Owens-Corning Fiberglas Corp. is the record owner of the following 12 patents which relate to glass fibers, glass fiber products, and their manufacture. These patents are registered as Nos. 5,359—5,370, inclusive, and are available for licensing on reasonable terms to any prospective manufacturer who can meet reasonable requirements of financial responsibility. Detailed information may be obtained from Carl G. Staehlin, Secretary, Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

Pat. 1,771,216. INSULATING BODY OF SPUN GLASS.

Pat. 1,875,491. MANUFACTURE OF SPUN GLASS.

Pat. 1,923,183. FILAMENT SPINNING APPARATUS.

Pat. 1,950,219. SPUN GLASS METHOD AND APPARATUS.

Pat. 1,954,732. METHOD AND APPARATUS FOR MAKING GLASS YARN.

Pat. 2,175,226. INSULATING AND WEATHER RESISTANT MATERIALS.

Pat. 2,354,765. CAMOUFLAGE FABRICATING MACHINE.

Pat. 2,371,458. CAMOUFLAGE FABRICATING MACHINE.

Pat. 2,407,295. APPARATUS FOR PRODUCING FIBROUS GLASS.

Pat. 2,407,456. METHOD OF PRODUCING FIBROUS GLASS.

Pat. 2,407,483. TREATING FIBROUS GLASS.

Pat. 2,411,326. MAKING REINFORCED SLIVERS.

The Owens-Corning Fiberglas Corp. is the record owner of the following two patents on inventions which are not directly usable for the manufacture of glass fibers, but which cover the use of glass fibers or glass fiber products in various types of manufactured articles or equipment. These patents are registered as Nos. 5,371 and 5,372 and are available for royalty-free licensing to any prospective manufacturer making request

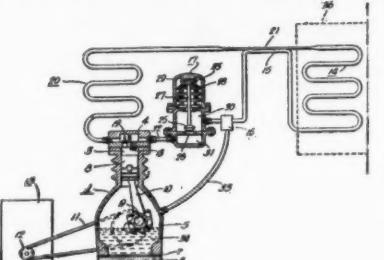
therefor upon payment of a \$5 application fee for each patent.

Pat. 2,403,872. TREATMENT OF GLASS FIBERS.

Pat. 2,404,904. BONDING GLASS FABRICS TO INORGANIC SOLIDS.

## Week of April 15

**2,418,853. REFRIGERATING APPARATUS IN WHICH THE PRESSURE IN**



**CLASSIFIED ADVERTISING**

RATES for "Positions Wanted" \$2.50 per insertion. Limit 50 words.

RATES for all other classifications \$5.00 per insertion. Limit 50 words.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

### POSITIONS WANTED

REFRIGERATION SERVICE man now employed desiring change. Interested in commercial servicing and installation, or as counter man. Graduate of well-known refrigeration and air conditioning school with two years' experience in that field. BOX 2398, Air Conditioning & Refrigeration News.

REFRIGERATION SERVICEMAN—graduate of refrigeration school, 18 months experience on low temperature and soda fountain equipment. Would be interested in training position with reliable company anywhere in United States. BOX 2399, Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER. 8 years experience in selling, installing and servicing domestic and commercial refrigeration. Have late model car, and field service tools. Married veteran. Now service manager of midwest concern, but desire position in the southwest, west coast, or South America. Address BOX 2400, Air Conditioning & Refrigeration News.

AM PRESENTLY employed management sales wholesaler distributor major appliances. Desirous of change in sales or management capacity. Have extensive experience all phases distribution field. BOX 2403, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

WANTED: FACTORY representative to establish dealers and distributors in the State of Indiana for an old established Eastern manufacturer of farm milk coolers, farm freezers, and commercial refrigeration products. Excellent potential earning possibilities. Reply to BOX 2333, Air Conditioning & Refrigeration News.

REFRIGERATION ENGINEER wanted by established eastern manufacturer of fractional horsepower hermetics; must be familiar with compressor design and application to appliances. BOX 2402, Air Conditioning & Refrigeration News.

FIELD SERVICEMEN refrigeration manufacturer eastern seaboard requires several refrigeration field servicemen—preferable with national service experience in working with dealers and distributors. Good opportunity for qualified men who are willing to travel. Write stating full qualifications. BOX 2404, Air Conditioning & Refrigeration News.

### EQUIPMENT FOR SALE

HERE IS a buy. We are liquidating our 22 cu. ft. stainless steel upright frozen food cabinets and some 6 ft. beverage coolers. For information: ACME REFRIGERATION CO., 634 Dean St., Brooklyn, N. Y. ST. 3-3040.

FOR IMMEDIATE delivery, brand new 1947 model Carrier 3 HP self-contained air conditioning units in original crates for 230 volt DC. Also some 7½, 10 HP and 20 HP motors suitable for compressors 220 volt, 3 phase. AIR COMFORT CORPORATION, 1307 So. Michigan Avenue, Chicago 5, Illinois. HARISON 0828.

MOTORS AND condensing units—available at once—1½—1¾—1½—1¾ Universal condensing units with or without motors. Special—six hole ice-cream cabinets with 1½ hp. Copeland units less motors \$225. Also beverage coolers, beer equipment, stainless steel reach-in freezers. ALBROD CORP., 319 West 48th St., New York City 19, CL 6-9100.

IMMEDIATE DELIVERY—condensing units, air-cooled, close-coupled with Tecumseh compressor and motor. Brand new 1947 production. Prices slashed to reduce excess inventory. 1½ HP—\$90.00. 1½ HP—\$108.00. BERLY MFG. CORP., 233 Nevins St., Brooklyn 17, N. Y.

FOR SALE—60 ton Westinghouse air conditioning system including evaporative condenser and heating coils. Also oil filter. Used two years. Bargain. THE BIMEL COMPANY, 2600 Colerain Ave., Cincinnati, O.

IMMEDIATE DELIVERY—Jordon 16LL freezers complete with compressor, \$350.00; 30 cubic foot upright freezer with 1½ HP compressor, \$650.00; 20 cubic foot upright with 1½ HP compressor \$500.00; Panelectric automatic ice cube maker, \$350.00; F.O.B.

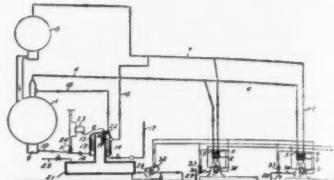
THE CRANKCASE OF THE COMPRESSOR IS CONTROLLED. Malcolm G. Shoemaker, Abington, Pa., assignor, by mesne assignments, to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application Nov. 29, 1944, Serial No. 565,683. 5 Claims. (Cl. 62—3.)

1. In a refrigerant circulating system for compressing, condensing, and evaporating a refrigerant, the combination with a compressor comprising a crankcase and suction and discharge ports, of variable-speed drive means for said compressor, a condenser connected to said discharge port, an evaporator connected to said condenser for reception from the latter of the condensed refrigerant, means for regulating flow of the refrigerant from the condenser to the evaporator, means for conducting refrigerant from the evaporator to the suction port of said compressor, and means responsive to evaporator pressure for preventing the pressure in said crankcase from falling below a predetermined minimum irrespective of the speed of operation of said compressor.

**2,418,982. OIL SEPARATOR IN REFRIGERATION SYSTEMS.** Joseph R. Zwicky, East Orange, N. J., assignor to

Worthington Pump & Machinery Corp., Harrison, N. J., a corporation of Delaware. Application June 6, 1945, Serial No. 597,742. 7 Claims. (Cl. 62—115.)

1. In a refrigerating system including a compressor and an evaporator and a condenser and wherein a refrigerant is evaporated compressed and condensed to



provide refrigeration, an oil separator, means for delivering mixed refrigerant liquid and oil from the evaporator to said separator, and means controlled by the temperature of the mixture of separated oil and residual refrigerant in the separator for controlling the delivery of mixed refrigerant and oil to the separator.

(To Be Continued)

## REFRIGERATION PLANT

—consisting of 2 FRICK 6 cylinder, enclosed type, 4½ x 4½, Freon 12 compressors rated 7.5 tons each at minus 15 degrees suction (total of 15 tons) each complete with marine type condenser, condenser water pump, receiver, expansion valves and dehydrators, strainers, gauges and thermometers. Either electric or steam engine drive design for maintaining insulated space of 30,000 cubic feet at 0°. New and completely crated for Export.

Complete plant \$4,950.00  
Write to Mr. Ammann

**Consolidated Conditioning Corp.**  
26 West 47th St.—New York 19, N. Y.

**FLOAT REPLACEMENTS.** For replacing defective high side floats on all household units. Regular charging connection, capillary tube setup, internal strainer and exact mounting plate. Part #2000-Westinghouse (4 hole plate), and #210 (3 hole plate); Part #2020-Gibson Part #2030-General Electric (DR-1 & DR-2). Part #2040-For general replacement (undrilled plate). \$6.75 each. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56.

**SEALED CROSLEY TERMINALS.** Installed from the outside in a few minutes without opening the compressor. Corrects leaky terminals on all Crosley "F-12" units. Set of three \$6.75 (Part No. 1020). Installation tool \$1.65. Immediate delivery. Money-back guarantee. SEALED UNIT PARTS CO., 3097 Third Ave., New York 56, N. Y.

**CONDENSING UNITS** complete with motors 1½—1¾—1½—1¾ HP. Expansion valves, controls, pulleys, belts, dryers, etc. All equipment is new in original cartons. Will be sold at wholesale cost or less. Write for list prices. ULTRA-COLD, INC., 2619 Exposition Place, Los Angeles 16, California.

**NEW COPELANDS** complete units with Wagner motor and controls—"Freon" gas ½ \$147.00, 1½ \$260.00. New Wagner ½ motors \$45.00. Write with deposit SAMUEL YOUNGER, 980 N. 6th St., Philadelphia, Pa.

½ HP UNITS complete with motor. \$98.50. Other models from ¼ HP to 1 HP at new low prices. All units supplied with motors. Send for catalog 742A. BOX 2405 Air Conditioning & Refrigeration News.

### BUSINESS OPPORTUNITIES

**COMMERCIAL REFRIGERATION** business, doing \$100,000.00 inventory approximate \$15,000.00, service 20 southeastern counties South Dakota and six Minnesota counties. Valuable franchises available. Hundreds of active accounts. Inventory 100% clean, will be sold at invoice cost. Write Harold J. Johnson, JOHNSON'S INC., Mitchell, South Dakota.

\$17,500 BUYS an established refrigeration service company. Clientele—good will-parts and equipment. Home with 5 large, light rooms, hot water, oil heat, insulated building. Modernized store and large work shop. Good location. A good buy. Inquire J. I. KISLAK, INC., Realtors, Kisla Building, 32 Journal Square, Jersey City, New Jersey.

**ILLI HEALTH** forces sale at inventory of well established refrigeration and air conditioning sales and service organization. Many valuable franchises and service agreements. Excellent location in Southern Colorado, low rent, good help, first class shop and office equipment, late model trucks. Real money making opportunity. BOX 2373 Air Conditioning & Refrigeration News.

**DOMESTIC AND COMMERCIAL** refrigeration and air conditioning sales and service in Southern California. Franchises on top lines of merchandise. Established 18 years; good lease. All inventory readily salable. Profitable year-around business, now grossing about \$100,000. per annum. Good deal to interested party. BOX 2061 Air Conditioning & Refrigeration News.

**WALK-IN REFRIGERATOR DOORS**  
(Product of JAMISON MFG. CO.)  
**\$46.00 PER SET OF 3**  
—IMMEDIATE DELIVERY!  
Brand new sets of 1 outside door (8" cork insulation) and 2 vestibule doors (all 3 Galvanized sheet metal covered front and back, includes complete door frames and accessories).

Subject to prior sale.

**Consolidated Conditioning Corp.**  
26 West 47th Street, New York 19, N. Y.

## Improved Conditioning, Refrigeration Mark Frigidaire-Equipped 'Train of Tomorrow'

### New Diesel Power Units Meet Loads Created by Such Applications as Electric Water Coolers

DAYTON, Ohio—Behind the scenes in General Motors' sleek revolutionary new "Train of Tomorrow," Frigidaire engineers have developed and installed new electrical generating, air conditioning, and refrigeration equipment.

Each of the four astra-dome cars in the train—a chair car, sleeper, diner, and observation car—has been outfitted with these Frigidaire developments. As a result, the traveler is as comfortable, well-fed, and entertained as he is accustomed to be in a fine hotel, it is claimed.

#### Maximum of Conveniences

Even the most seasoned traveler of today expects a maximum of conveniences when he steps aboard a waiting train. The air must be fresh and cool in the summer and warm in the winter. There must be plenty of refreshing cold water on tap. Food must be savory and cooked to his taste. The menu must include an abundance of fresh fruit and vegetables. He enjoys sipping from a frosted glass before dinner. Lighting must be constant whether the car is in motion, standing in the station, or waiting on a siding.

Frigidaire personnel, headed by S. M. Schweller, chief engineer, and L. McCutcheon, manager of direct factory sales, were ready with many practical suggestions and equipment designs to effect these conveniences.

An adequate source of electrical power was a necessary step in the development of improved air conditioning, refrigeration, ventilation, heating, and lighting. Ever-increasing public demands for more comforts and conveniences have amplified the need for more and better electrical power, until today a single modern car requires as much as 25KW of generating capacity to supply these facilities. A fully-equipped dining car, complete with electric cooking facilities may require as much as 60 KW—enough to light 100 average homes.

#### Reach Limit of Capacity

The axle-driven generating system, successful with lighter loads, has already reached the practical limit of its capacity. Large storage batteries used with this system are exceedingly heavy, occupying valuable space. Furthermore, when cars are stationary, or running at reduced speeds, the battery charge rapidly becomes exhausted. Small appliances and other standard electrical devices cannot be operated readily on direct current.

Frigidaire engineers examined the limitations of existing railway car electrical systems, surveyed probable future requirements, and then designed an entirely new type of generating unit to meet their requirements. A compact, "power-package," developed with the cooperation of Detroit Diesel Engine and Delco Products Divisions of General Motors, provides each car with its own individual source of electricity for air conditioning, ventilation, and refrigeration, plus fluorescent lighting.

This compact Diesel-powered electric generator unit provides each car with its own individual source of electric power for air conditioning, refrigeration, and ventilation and, in addition, assures excellent car lighting, regardless of the speed of the car or the presence of other loads upon the electrical system.

The "power package" is designed for continuous operation, permitting the car to be uncoupled from the train without reduction of its electrical power. However, in case the engine stops for any reason, the car affected can be connected to the duplicate electrical system of an adjacent car to obtain sufficient current for full lighting and ventilating facilities.

The dining car, featuring an all-electric kitchen, is equipped with a 40 KW auxiliary power package which is operated only when additional current is required for the kitchen appliances.

The individual car power unit consists of a three-cylinder, 1,200 r.p.m. engine connected directly to a "split alternator" (actually two alternating-current generators built on a common shaft and within a common

current devices and also permits full use of these devices while a car is stationary or even uncoupled from the train.

The astra-dome cars, making up the "Train of Tomorrow," with their large areas of glass exposed to the sun, require greater refrigeration capacity for comfort cooling than the conventional car. While the air conditioning installations on this new train are similar in many ways to equipment now in use, certain basic improvements were introduced to provide this increased capacity.

Of particular importance is the flooded-type under-car condenser unit.

#### 10-Ton Cooling System

An air conditioning system of 10 tons cooling capacity is installed in each car. Six tons of cooling are applied to the lower compartment of the car and four additional tons are directed to the astra-dome compartment.

A Frigidaire air conditioning unit cools or heats air to the required temperature, then circulates it throughout the car. Heat, when required, is supplied by a steam coil.

Ducts carry conditioned air to the various parts of the car where it is discharged without drafts. The design of this duct system varies with different types of cars.

Two air conditioning units are suspended side-by-side above the ceiling at one end of the car. The larger unit, which supplies conditioned air to the lower car space, consists of two centrifugal type blowers, driven by a 1-hp. electric motor; a cooling unit; a heating unit; a drain pan to collect moisture condensed from the air, and necessary control valves and connections.

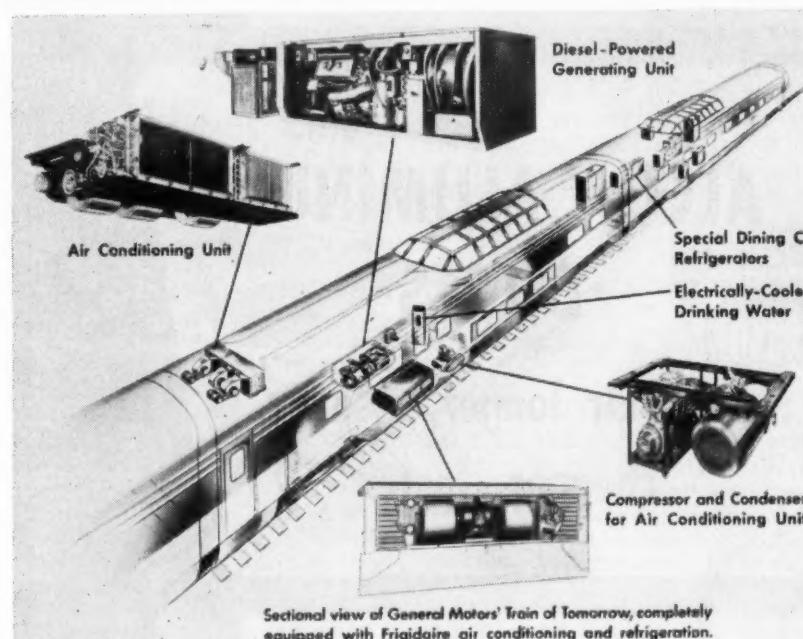
The blower assembly is isolated from the car and from the rest of

the frame). A 15 KW generator supplies 220-volt, 60 cycle current for operating air conditioning and refrigeration equipment. A 120 volt 60 cycle generator of 10 KW capacity, furnishes current for lighting and ventilation and also for radio sets, electric shavers, and other small devices.

Mounted on the side of the alternator housing, and driven from the extended alternator shaft, is a 38-volt, 1,800 r.p.m. direct-current generator supplying approximately 3 KW. This generator excites the fields of the split-alternator and charges the storage battery required for engine cranking, controls, and emergency lights. The engine is tilted on its crankshaft axis to meet necessary rail clearances and to make the operating parts accessible for inspection, adjustment, or replacement.

#### Unit Mounted In Rubber

The entire power unit is supported by synthetic rubber mountings, and is enclosed in an air conditioned, dust-proof compartment located below the floor of car. Electrical, fuel, and coolant line fittings can easily be disconnected; roller bearings built into the mountings permit the entire unit to be pulled out of the side of the car for repair. With proper facilities, a unit requiring shop repair can be removed and a replace-



ment unit installed in less than one hour.

The engine cooling system is tightly sealed and requires no servicing. A radiator is located outside the compartment and is cooled by an electric fan. The engine may be started or stopped manually by a switch under the car or from the electric locker within. Once started, operation is automatic. If the engine stops, emergency lights switch on automatically.

Output of both AC generators is controlled by a simple DC carbon-pile regulator. Direct current output is governed by similar means and the circuit is provided with a reverse current relay to prevent the battery from discharging into the generator when the output is less than the battery.

#### Control Devices Standard

Only standard devices regularly used by railroads are included among the control equipment. Complicated controls, heretofore associated with AC equipment, have been eliminated.

The Diesel engine is controlled by a magnetic throttle and by a governor which maintains a speed of 1,200 r.p.m.

Numerous advantages are inherent in the "power-package." There is a significant load reduction for the locomotive with the elimination of constant drag of axle-drixxen generators. Compared with the axle-driven equipment, these units save as much as 600 hp. (engine load) on a 12-car train, it is claimed.

Weight of the storage battery has been reduced approximately 3,500 pounds per car. The new unit permits the use of standard alternating

the unit by means of rubber mounting supports and flexible ducts, providing quiet, vibration-free operation.

The smaller unit, which supplies conditioned air to the dome compartment of the car, is similar in construction, but has only one blower, driven by a 1/2-hp. motor. The cooling and heating units are also smaller.

#### Cooling Units Divided

Cooling units are divided into upper and lower sections to permit operation at one-half or full cooling capacity. Each section has a thermostatic expansion valve to regulate the flow of refrigerant according to the cooling requirements, plus a distribution manifold, which meters an equal quantity of refrigerant to each of the parallel passages through the unit.

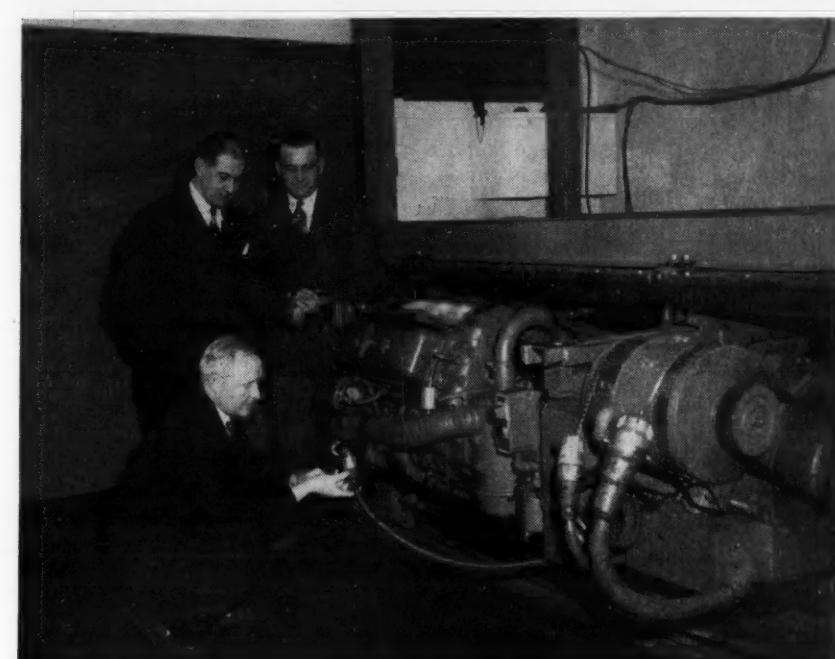
Finned heating coils are located directly behind the cooling units. When heating is required, these coils are connected to lines from a steam generator in the locomotive.

Ducts, concealed in the car ceiling, deliver conditioned air to all passenger compartments, through special discharge grilles designed to eliminate drafts. Blowers operate continuously, circulating 2,800 c.f.m.

One thousand c.f.m. are delivered to the dome compartment and 1,800 c.f.m. to the lower section of the car. Seven hundred cubic feet of filtered fresh air are introduced into the system each minute to replace air exhausted from the car, and to assure adequate ventilation. Recirculated air is filtered and deodorized to remove dust, smoke, and odors.

The Frigidaire compressor-motor unit consists of a 4-cylinder, vertical reciprocating "Freon" compressor,

## Frigidaire Develops Train Power Generator



Plug-in electrical connections are featured in the new Diesel electric power generator created by Frigidaire for the "Train of Tomorrow," demonstrates J. L. Gibson, manager of commercial and air conditioning engineering, to S. M. Schweller (left rear), chief engineer, and L. McCutcheon, direct factory sales manager.

driven by an enclosed 15-hp. motor. It is suspended under the car on shock-absorbing mounts, fully accessible for maintenance and service.

The specially-designed "flooded-type" condenser consists of a stainless-steel enclosure in which a finned condenser coil is cooled by two centrifugal-type blowers, driven by a 1-hp. motor. The cooling effect of the air is increased by discharging water onto the finned condenser coil at the rate of 600 gallons per hour.

A 1/4-hp. electric pump delivers the water to the discharge nozzles from a 180 gallon tank built into the lower section of the unit. A small part of the water is evaporated on the coils and the remainder drains back into the tank and is recirculated. Baffles within the tank minimize the surging of water when the car is in motion.

#### Counter-flow Condenser

Air is blown through the condenser coil from below, while the water is sprayed from above. As a result of this counter-flow, the air is washed before it strikes the coil, and the coil surfaces remain clean, assuring a rapid heat transfer. Dirt washed out of the air is collected in traps from which it is emptied easily. A liquid refrigerant receiver within the enclosure is made of brass and the entire unit is constructed of corrosion-resistant materials. This unit is also suspended under the car.

Thermostats control automatically the operation of the air conditioning equipment. When cooling is required, the compressor and condenser units operate until the desired temperature is attained. The thermostatic control then automatically closes an electrically operated valve, shutting off the flow of refrigerant to the upper section of the cooling unit. At the same time, a similar valve on the compressor unit opens to bypass two cylinders of the compressor, thus reducing its pumping capacity by approximately one-half.

This "modulating" arrangement varies the capacity of the system according to cooling requirements, permitting regulation of car tempera-

ture and humidity within close limits, despite prevailing outside weather conditions. Thermostatic controls also regulate car heating.

Refrigerated fixtures in each car operate automatically to maintain required temperatures, ranging from 50° F. for drinking water to 0° for frozen foods.

The dining car has facilities for storing large quantities of fresh and frozen foods. Eleven separate refrigerated fixtures provide a total of 111 cu. ft. of storage space.

#### Large Capacity Refrigerator

A refrigerator at the right of the forward vestibule, opening into the kitchen, provides large food storage space and has a capacity to freeze 225 pounds of ice cubes every 24 hours. Within the kitchen itself, are an under-the-counter chef's refrigerator, a fish refrigerator, and a frozen food storage cabinet.

In the pantry there are two service refrigerators, as well as individual cabinets for storage of ice cream and ice cubes. A refrigerated salad counter is also provided.

A refrigerator is installed in the dome compartment to assist in serving passengers who choose to dine on the upper level under the astra-dome. Eight cases of bottled beverages may be cooled and stored in the steward's refrigerator at the side of the stairs leading up to the observation dome. Four compact Frigidaire condensing units, concealed at different locations in the car, furnish dependable refrigeration for various fixtures.

Cooling, fresh water is constantly circulated throughout the sleeping car and is on tap in all compartments. A special Frigidaire tank-type water cooler, concealed at the left of the rear vestibule, chills three gallons of water per hour, with refrigeration being supplied by a condensing unit near the cooler.

In the cocktail lounge in the observation car, a built-in refrigerator in the back bar is cooled by a Frigidaire condensing unit. The chair car is also equipped with a Frigidaire water cooler.

## STYLED FOR PERFORMANCE

Larkin refrigeration products, made by the originators of Cross Fin Coils, combine industrial beauty with flawless performance. Humi-Temp Forced Convection Units—Bare Tube and Zinc Fused Steel Plate Coils—Evaporative Condensers—Air Conditioning Units—Instantaneous Water Coolers—and other top-ranking factors in industrial and commercial refrigeration.



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## Kinetic 'Mystified' By 'Freon' Offer

(Concluded from Page 1, Column 5) through the follow-up of the small advertisement which appeared in a recent Sunday's edition of *The New York Times*. (See cut.)

Officials of Kinetic Chemicals, Inc., said today they do not know how any firm could collect any great amount of "Freon-12" refrigerant for export or domestic resale.

"It has come to our attention that a large quantity of 'Freon-12,' reported to be about 750,000 lbs., is being offered for sale," a company statement said.

"We understand the 'Freon-12' is being offered in 330-lb. drums. Considering that most shipments to our customers are being used immediately, we do not know how 750,000 lbs. of this material could possibly have been collected anywhere in the world."

"Kinetic does not put 'Freon-12' up in 330-lb. containers. If this is 'Freon-12' it has been transferred from containers of other sizes."

"We are as mystified as those who have noted the public offering of this material as to its source. We are investigating the whole matter."

Some industry sources said that the unusual size of the cylinders in which the refrigerant was being offered might indicate that it was Army or Navy surplus, or that it had been packaged in such drums from a bulk stock of some sort.

Following is the text of a letter from Stone & Sagon, Inc. in answer to an inquiry about the availability of "Freon-12":

"We are pleased to advise that we are in a position to furnish large quantities of 'Freon F-12' packed in ICC-4B-400 cylinders containing 330 pounds per cylinder.

"Our prices are as follows:

1 cylinder (330 pounds)	\$2.25 per pound
2 cylinders (660 pounds)	\$2.20 per pound
3 cylinders (990 pounds)	\$2.15 per pound
4 cylinders (1320 pounds)	\$2.10 per pound
5 cylinders (1650 pounds)	\$2.05 per pound

"All prices are f.o.b. South Charleston, W. Va., and at the present shipment can be made within two to three weeks from receipt of order.

"We will be happy to quote special prices on large quantity orders in excess of the amounts specified above.

"We are also in a position to furnish you with 'Freon' on a contractual basis over a reasonable period of time."

## Industry Council Maps Action on 'Freon'

NEW YORK CITY—The Refrigeration Industry Council, meeting here June 19, mapped a course of action on the "Freon" situation which is expected to be followed through on within the next few weeks.

While the exact nature of the program was not divulged, the plan was expected to embrace a method of meeting as equitably as possible the "Freon" requirements of all the ele-

Distributors Refrigeration—Heating Parts & Supplies. Par Condensing Units.

All Available Material In Stock.

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... increases refrigeration plant capacity; saves power and water.

Patented features: "duo-pass" coil keeps condenser tubes free from scale; "oilout" constantly cleans oil and dirt from the refrigerant. "Balanced Wet Bulb Control" maintains minimum practical compressor head pressure.

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## Heads Advertising



STEWART ROBERTS

He has been appointed director of advertising and sales promotion for Bendix Home Appliances.

ments in the industry who have need for it.

Members of the Refrigeration Industry Council as originally formed consist of members of Refrigeration Equipment Manufacturers Association, Refrigeration Equipment Wholesalers Association, Refrigeration Service Engineers Society, and National Association of Refrigeration Contractors.

It is said that invitations to participate in the Council have been extended to Air Conditioning and Refrigerating Machinery Association, Commercial Refrigerator Manufacturers Association, and the Soda Fountain Manufacturers Association.

## Bronold Named Agency, Contract Manager for Sturtevant Division

HYDE PARK, Mass.—Alan J. Bronold has been appointed general agency and contractor manager of the Sturtevant Division of Westinghouse Electric Corp.

A veteran of 20 years as a sales and marketing specialist with Westinghouse, Bronold for the past four years was assistant to the vice president in charge of sales at company headquarters in Pittsburgh.

In his new position, Bronold will coordinate the headquarters activities of the heating, ventilating, air conditioning and Precipitron departments and the application of Sturtevant products for heating, piping, and air conditioning contractors and for industrial process air conditioning systems.

Graduated as an electrical engineer from Bliss Electric School in 1926, Bronold joined Westinghouse the same year as a graduate student at the East Pittsburgh Works. After three years in the central station sales department at Pittsburgh, he became a branch manager for the Westinghouse Lamp Division.

In 1939 he was named manager of the agency and specialties division for the Northwestern district.

## Stock Split, Name Change Voted for Hussmann Co.

ST. LOUIS—Stockholders of the Hussmann-Ligonier Co. here have voted to split the outstanding common stock two for one, jumped the authorized total from 250,000 to 1,000,000 shares, and to change the firm's name to Hussmann Refrigerator Co.

## Emerson Electric Shifts Branch Office In Detroit

DETROIT—Emerson Electric Mfg. Co.'s Detroit district office has been moved from the Boulevard building to 1375 E. Jefferson Ave. here, announces O. D. Metz, district manager.

## Dykes Opens Airtemp Outlet In Shreveport

SHREVEPORT, La.—Dykes Co., Chrysler Airtemp dealer and service agency has opened here. The firm, headed by O. J. Dykes, Jr., will deal in air conditioning, heating, and commercial refrigeration.

## Conditioner Excise-- Ruling Is Revised

(Concluded from Page 1, Column 3)

"Recently certain manufacturers of this type of equipment have furnished more detailed information than was previously available, which has caused this office to give consideration to a possible change in the position previously taken."

"This additional information indicates that in practically every case the air conditioners of this type require ductwork to properly distribute the air to the space to be conditioned. This ductwork is required both to make efficient distribution possible and also to eliminate undesirable drafts which would occur without the use of ductwork."

"It is also understood that a duct is also necessary as a source of outside air in order that the same air will not be recirculated in the conditioned space. If such outside air were not provided, the recirculated air would soon become objectionable, due to the concentration of odors within the conditioned space. It appears that the building codes of certain cities require that a duct be provided as a source of outside air," says Mr. Bliss.

"The information further shows that there is required for these types of air conditioners special piping to provide cool water for use in cooling the air and to dispose of the water after it has absorbed heat from the space being conditioned."

"There is also necessary a special

## Norge Shows How Video Shows Are Produced



When Norge recently put on the first "live" television show in the Detroit area, the audience was taken "behind the scenes" by an extra television camera as Shirley Radner demonstrated features of a new refrigerator.

source of electric current of a voltage higher than is usually provided in the ordinary electrical circuit.

"The manufacturers of certain machines maintain that the awkward appearance of the air conditioners under consideration is such that the purchasers would not desire to have them installed in the room to be conditioned, particularly in those cases where a pleasing appearance is

necessary.

"In view of the additional information as indicated, this office has reconsidered the position previously taken and it is now held that air conditioners of the type described herein do not come within the scope of section 3405(c) and therefore sales of such articles by the manufacturers are not subject to tax," concludes Mr. Bliss.

## ALCOA ALUMINUM DUCTS

carry air longer, cleaner, cheaper, faster

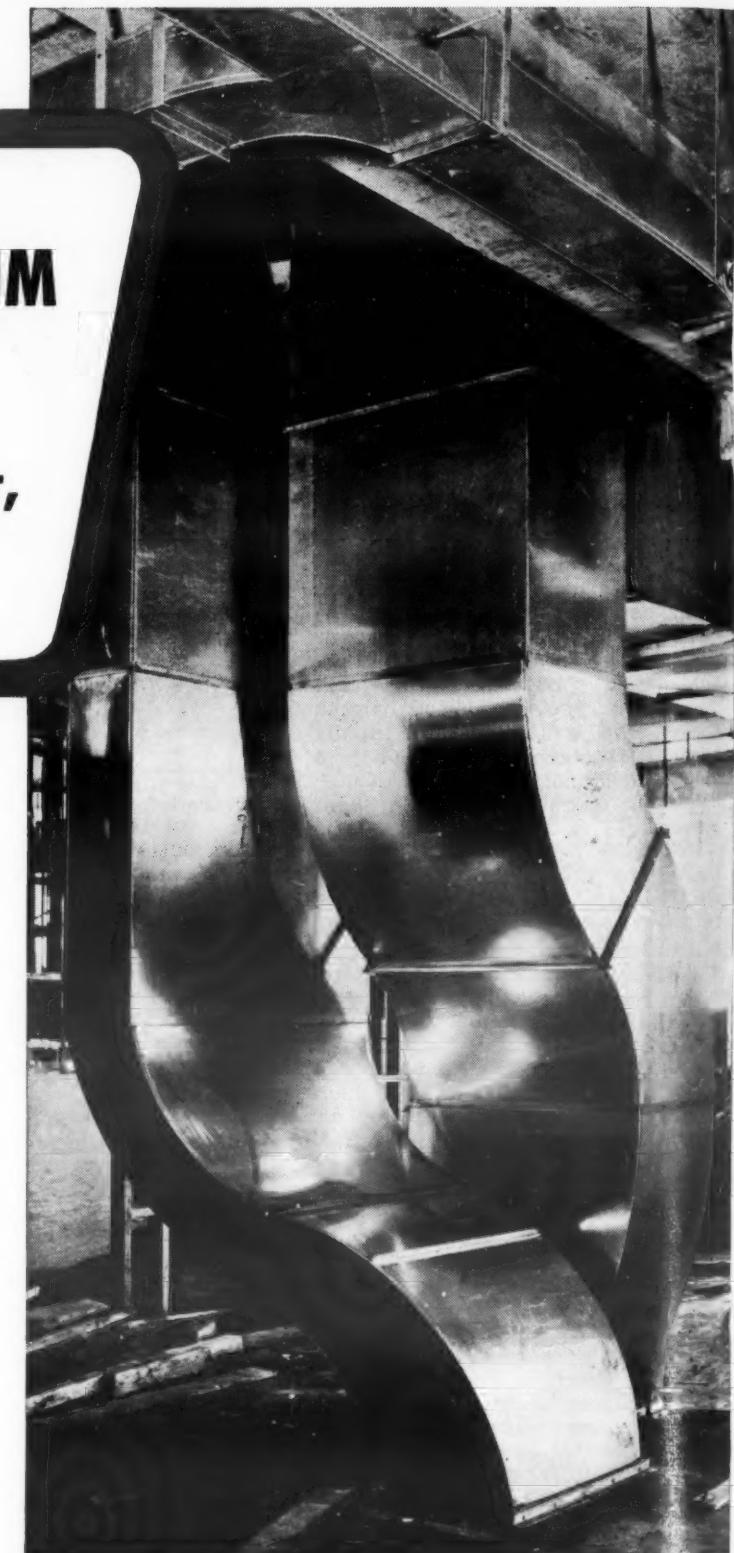
Longer because Alcoa Aluminum is non-rusting, requires no painting. Is resistant to most corrosive vapors and dusts.

Cleaner because any moisture that condenses on aluminum stays colorless, produces no unsightly rust stains and discoloring droplets.

Cheaper because the light weight of aluminum... one-third that of steel... makes fabrication and erection easier, requires less man power, lowers transportation costs. And aluminum doesn't need to be replaced nearly as often as ferrous duct systems. Maintenance and depreciation are greatly reduced.

Faster because aluminum surfaces set up less resistance to air flow. There is less friction inside an aluminum duct system.

You can get Alcoa Aluminum Sheets NOW for ventilator and duct systems, housings and hoods in both coil and flat forms. All good sheet metal shops find Alcoa Aluminum Sheets easy to fabricate and install. ALUMINUM COMPANY OF AMERICA, 1975 Gulf Building, Pittsburgh 19, Pa. Sales offices in 55 leading cities.



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